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No. XXI., OF VOL. II., 1937. LONDON, SATURDAY, NOVEMBER 20, 1937. Pp. 128—Price 1s.
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PHYSIOLOGY AS A PART OF GENERAL EDUCATION*

By LEONARD P. LOCKHART, M.D. Camb.

MEDICAL OFFICER, MESSRS. BOOTS PURE DRUG CO. LTD., NOTTINGHAM; COÖPTED MEMBER, NOTTINGHAMSHIRE EDUCATION COMMITTEE; CHAIRMAN OF THE ASSOCIATION OF INDUSTRIAL MEDICAL OFFICERS

THE application of science to industry and to the general life of the community has of recent years brought medicine into contact with a rapidly widening range of social problems. This is inevitable because the impact of applied science on man is of so profound a nature that while workers in the non-vital sciences are devising mechanisms the workers in the vital sciences are called on with increasing urgency to assist in the process of human adaptation to the new conditions thus created. Stability and progress in the machine age depends on the degree to which social and economic change can take place without outraging basic physiological needs. Physiology bears on the day to day personal life of every human being. To attempt to live without any knowledge of its main principles is however quite common. Concerning the intricate mechanism of life ignorance is widespread, with the result that as Herbert Spencer said "ordinarily one-half of life is thrown away." That statement is still not very far from the truth. In the structure of our personal problems it is true that psychological factors are often paramount but without a basis of physiological knowledge psychology as a science would be non-existent because its symptomatology is so often functional.

Since the personal is of all things the most urgent it would be well if as a start we decided that every man, woman, and child should be equipped with the minimum of physiological insight necessary to maintain the body at the best standard of health which circumstances permit. Then secondarily we need to consider what knowledge is necessary for those who, through the legislature, through administration, or through their power to control other people's lives, have it in their hands to improve those environmental circumstances which limit the development of the personal life of each citizen.

THE BASIC EQUIPMENT

The physical education of each child in school should include elementary physiology. This is sometimes called "personal hygiene." The two are not however synonymous terms, and the hygiene now taught in schools should have a wider physiological basis. This could best be attained by helping teachers to acquire a deeper foundation of physiological knowledge. They would thus be enabled to coöperate more closely with the school medical service and make a unitary whole of medical inspection and actual teaching in class. A vast amount of avoidable sickness, disability, and personal inefficiency would be saved if this teaching could be made to penetrate more deeply into the adolescent mind.

Hygiene and physiology possess little or no general examination value. Hence it is possible, and indeed common, for children even at matriculation standard to be ignorant concerning the most elementary natural functions, such as those of the skin, muscles, and digestion. This is a serious handicap to the living of a full and healthy life, for in the absence of a physiological background much that is subsequently encountered under the term "health education" is a double-edged weapon. This type of propaganda too often deals with disease rather than with health, and thus tends to aggravate the problem it sets out to solve by creating hypochondriasis which is often only another name for fear and credulity. Physiology on the other hand deals with normal function in such a way that something positive is set up as an ideal to be aimed at and pathological departures from that standard are considered implicitly rather than explicitly and thus appear in a more comprehensible and far less sinister light. Unfortunately those who set school examination policy seem often to be very forgetful of the physical needs of examinees. So forgetful indeed that this essential human knowledge gets sadly squeezed out of a rapidly extending curriculum. It can only be ignored at a price which is paid long after the child leaves school. There have been great improvements, especially in elementary and central schools, but more by the efforts of enthusiastic individual teachers than as a result of encouragement from the bodies that exercise such vast influence on our education—namely, the senates of the universities.

The plea for physiology as an essential element in general education is not based solely on its value to the individual in his or her own private life. The case is far stronger than that, and it behoves all who control our educational policy to consider the matter afresh in the light of current social and economic questions. It is in secondary schools and universities where the greatest need lies, because it is from these institutions that the majority of our legislators, administrators, industrial leaders, and influential teachers emerge to deal with a world in which it is impossible to get a truly objective view of reality without some sound physiological understanding. Under the heading of teachers we should include journalists and all those who mould public opinion through literature, the radio, and the film. This is not a plea for the creation of thousands of half-baked physiologists, but rather a demand that no one shall emerge into positions of responsibility and power without being able to appreciate the human physiological factors in any problem when they are properly presented, and, further, that persons in key positions shall know enough to enable them to call for that technical evidence at the right juncture in each issue that arises.

DEMOCRACY MUST BE PHYSIOLOGICALLY MINDED

The inclusion of biology into secondary education is a great step forward, but it is the physiological rather than the morphological aspect that needs emphasis, and it needs that emphasis particularly for those who after school life may never have a further chance of gaining the necessary insight. Our complex society living in an intricate social system can be neither happy, healthy, nor balanced unless its legitimate needs are met, nor can it vote wisely and exercise its democratic functions efficiently without having the issues placed fairly before it in all their naked truth. A modern democracy must be physiologically minded if it is to solve its problems effectively. The recent debates on the Matrimonial Causes Bill revealed great gaps in the

* Based on a paper read before Section I (Physiology) British Association at Nottingham.

knowledge and understanding of some of the most distinguished figures in our law-making machine. Gaps which should be impossible had those legislators been made aware during their educational career of the over-riding importance of the physiological aspects of human existence. There is a question which is coming before us at the present time with much urgency—namely, population and the allied problem of innate intelligence. Are we sure that the issues involved will be presented truthfully and in their unvarnished state, and will the majority of the nation be able to appreciate them objectively? The dull or backward child is as often a physiological as it is a psychological problem. Moreover the size of families raises the whole issue of physiological needs and the economic means of satisfying them. The subject of sexual physiology in an undramatised form obviously needs a place at some stage in adolescent education. These matters are clearly biological even if they have serious economic and social repercussions, but there are other matters which superficially appear unrelated to physiology but which so affect the lives of human beings that they raise distinct physiological issues. For example, the fishery and dairy industries; the construction of motor vehicles; the boot and shoe industry; the utilisation of coal; the electrical and gas industries; the design of housing estates and of industrial buildings—nutrition, ventilation, noise, light, posture, and environmental effects on the development of mental faculties are some of the matters thus involved and the issues are indirectly physiological. In passing one must pay tribute to a recent and highly effective piece of physiological education sponsored by the gas industry—namely, the short film, "Enough to Eat."

Often immediate economic considerations seem to be so pressing that mere physiology is pushed aside, but in the end the ultimate economic outcome depends on human health, happiness, and efficiency, and a whole generation may have to waste its time dealing with the errors of its predecessors instead of being able to advance. Fifty years hence it may well be that houses built to-day will be in need of mass demolition in order to increase space and give room for children to be brought up in, and thus to remedy a state of affairs which ought never to have arisen. The size of domestic gardens in relation, for instance, to the provision of healthy leisure pursuits and to the increased supply of protective foodstuffs has not received adequate attention.

As the units of social life get larger, cities, industries, transport organisations and the like, power becomes concentrated into relatively fewer hands with a result that the lives of vast masses of people are virtually controlled by quite a few individuals. It is essential that those powerful and responsible persons should have a sufficient knowledge of human needs to enable them to discharge their duties wisely and well. An understanding of physiological principles is an essential of such knowledge, and it is a quite inadequate qualification to have had an advanced or expensive education unless that education sets out to fit its students for the responsible life that lies ahead of them, bearing in mind that the most pressing question of our time concerns human adaptation: not only the adaptation of man to his environment but the modification of the environment to suit the needs of men and women.

PHYSIOLOGICAL ISSUES HIDDEN BELOW THE SURFACE

The impact of machine civilisation on man in the mass and as an individual is something far too profound and involved for us to rely on legislators and administrators who have not been properly trained for the work. A man may be a supreme technician and therefore fitted to control say an engineering works but he may be a bad staff controller. The direction of any organisation, industrial or civic, demands both kinds of skill not necessarily found in the same person but more likely to be so found if humanism on its functional side has been part of general education. In the administrative work of the modern state let us take six examples at random where important physiological issues lie hidden beneath the surface.

(1) The organised destruction of foodstuffs in order to keep up prices.

(2) The uniforms worn by public servants and their effect on physical well-being.

(3) The ratio of rent to fares on housing estates and the consequent effect on nutrition.

(4) The indiscriminate covering up of green spaces and the failure to appreciate the social value of natural beauty.

(5) The question of noise (including the misuse of wireless sets) which prevents young children getting proper sleep and adults from ever being in a state of rest.

(6) The use of playing fields on Sundays—especially by those who have no other available daylight leisure except a weekly half-day.

The items could be continued ad nauseam and everyone can add to the list. Suffice to say that the general ideas on such problems are very hazy and their importance is overlooked until something happens to produce a crisis. Ventilation is a good example of how slowly knowledge filters. The generally held belief is still that foul matter needs to be extracted by fans, and the truer version that given adequate air interchange it is an increase of cooling power that is needed is still not appreciated by the bulk of people, including even many engineers and architects.

Modern industry as a result of applied science and certain economic factors has to produce more per capita and hence the advent of specialised production and the threat that craftsmanship may become almost extinct. The new methods are as yet in their infancy but they are producing a variety of human problems. Not least is the fact that an alarming number of young people are growing up to-day without being in the possession of a single useful specific skill at anything. It is the desire of enlightened industrial management to overcome such problems but, owing to the general lack of appreciation concerning the real nature of the question, discontent instead of being made the subject of scientific investigation is allowed to become political. This is understandable in the present state of our general education but it is not scientifically a healthy state of affairs. Political action may be a means and at times the right means of correcting social wrongs, but if we allow the physiological basis of most of the social unrest in the world to become fogged by political argument we shall do irreparable harm. It becomes a case of concentrating on the means rather than on the ends. Social unrest is, if analysed, largely based on the lack of full physiological satisfaction, and much good would come if sufficient knowledge was widely enough spread to allow of its being studied from this angle.

It may be objected that intellectual freedom is not physiological but physiological principles regarding function are a safer guide than political prejudice. This is not as Utopian as it sounds, for a survey of Europe since the war shows how great an edifice of intellectual abstraction and strife can be built up on a foundation which has ignored elementary

functional truths. We shall not get to our goal any faster by continuing to ignore them. The society which is functionally stable leaves its independent thinkers to say and do as they like and to produce further changes by persuasion. Where the majority lives in physiological need a state of emergency is created where as a result of fear all independent thought is crushed. The peculiar conditions on the Polish-Lithuanian frontier are a good example of the relationship between physiology (in this case nutrition and family life) and statecraft.

MORE THAN A CULTURAL VALUE

All exact science has a cultural value, but an exact science dealing with living processes has something more. It can be made to illuminate a whole range of other subjects such as history and geography. Historical facts can be interpreted to pupils in a new light, for there is a physiological basis to social change and evolution which is historically of far greater moment than the doings of individual statesmen. What influence did diet and hookworm have on the civilisations of India and Egypt respectively? Did malaria or typhus play a significant part in the decline of ancient Greece, and what influence did the national attitude to physical culture have? It may have led to an excessive preoccupation with the body to the neglect of the mind, and the same factors may be operating in Europe to-day. How far did the fear of the physical which emanated in Europe in the middle ages lead to a neglect of hygiene and cause Greek medicine to remain in eclipse even during the Renaissance? Geography has its physiological implications. Captain Scott's ill-fated expedition would have been saved had a greater knowledge of physiological needs been available to it. The conquest of Everest depends on physiological factors. The dietary of China and the fine machine milling of rice have their lesson in the effects of beri-beri. The fusion of the Pacific and Atlantic, the creation of the Boulder Dam, and the tunnelling of the Alps can be so presented to children that the physiological implications become a living practical issue. A description of the orange trade can be linked with a statement regarding its value to man, and the fisheries of Newfoundland and Norway can be made more vital when considered in relation to vitamin deficiencies among industrial peoples.

The future policy of our country and of all industrial states depends to a large extent on our reading of the past in the light of new knowledge. The historian needs a physiological insight just as much as does the social administrator. There are three things therefore to bear in mind regarding physiology and general education.

(1) Factual instruction—e.g., personal hygiene based on the pupils' powers of assimilation but depending for success on teachers who are deeply aware of the significance of the subject.

(2) The inculcation of physiological principles for teachers and for all who pass through secondary schools and go out to control the lives of others.

(3) The illustration of historical, geographical, and non-vital scientific subjects by showing the physiological implications involved. Examples and exercises in arithmetic should where possible be given with a bearing on biological subjects.

The great problem is how to find time in the curriculum for a wider range of physiological study. The first thing is to make it compulsory on all pupils so that no one can by avoiding it gain time for other more valuable mark-gaining subjects. The next is to insist on all candidates for posts involving staff control and public administration being able to understand the meaning of a physiological report on some subject likely to be met with in their work—e.g., ventilation, food values, fatigue, shift systems, &c. Thirdly, the examining bodies should introduce questions in arithmetic which involve such terms as calories, heat loss, air velocity, dead air space, wages and food values, sickness absenteeism, fatigue and output, loss of light due to dirt, smoke, and window space. It is possible to test anything from addition to proficiency in logarithms by examples which call for at least an acquaintance with terms within the powers of the pupils concerned. This acquaintance with certain terms would lead to inquiry as to what they meant, and the advanced pupils might easily gather some knowledge of vital statistics which would improve their calculating abilities while at the same time teaching that much in the biological world is a question of probabilities which is not synonymous with guess work. The examples used to exercise calculating facilities can be something else in addition. They can be used to stimulate inquiry on a host of subjects of which physiology is one. It is encouraging to see that in some of the most recent school arithmetic books examples are being given regarding a few of these matters.

NOT JUST ONE MORE SUBJECT

Physiology is not just one more subject to be added to the school curriculum by yet another group of enthusiastic specialists. It is a fundamental of all education and of all health, but it goes further. By reason of its discipline as a vital science and of its conceptions as working hypotheses for life it lies at the root of sound national and local government and of enlightened industrial management. Progress in many fields of social life is slow not because people are necessarily stupid nor even primarily because they lack facts—one cannot be au fait with every technicality—but because even highly educated people are so often quite incapable of appreciating and of grasping the facts when presented to them. The vital sciences do not always talk in blacks and whites—"Yes" or "No"—but often in probabilities and tentative suggestions. Experiment and modification do not appeal to most people, and until they do real progress must be slow and hesitant.

Physiological knowledge and training is the enemy of vested interest. It teaches a conception of life which is critical and which asks questions demanding answers. It can be worked into the pattern of our educational system, incorporated even into other subjects and so made to appear as something essential and worthy of respect and further study. It can make many dull things interesting, and it can provide a seed which in the future will prove fruitful in social stability and progress. Without a wide spread of understanding of it we shall continue to fashion a world in which man finds it increasingly difficult to live without an escape mechanism. It may be the escape into illness or the resort to ill-considered and violent methods of social change or even war. The whole question merits a full and impartial review over a very wide range of human activity by an ad-hoc body set up by the universities on a basis broad enough to give its conclusions the greatest possible weight and effectiveness.

CULDUTHEL INFECTIOUS HOSPITAL, INVERNESS.—A new cubicle block extension, erected at a cost of £12,000, has been opened at this institution by Lady Hermione Cameron of Lochiel.

SARCOMA OF THE UTERUS

By R. S. Handley, M.B. Camb.

ASSISTANT PATHOLOGIST AND GEORGE MILLS SCHOLAR, MIDDLESEX HOSPITAL, LONDON; AND

John Howkins, M.D., M.S. Lond., F.R.C.S. Eng., M.C.O.G.

GYNÆCOLOGICAL REGISTRAR, MIDDLESEX HOSPITAL

(*From the Bland-Sutton Institute of Pathology and the Gynæcological Department, Middlesex Hospital*)

Sarcoma of the uterus though far from being a pathological curiosity is yet a rare and extremely lethal disease, the exact pathology of which is obscured by a generous literature. The present survey of 40 cases comprises the entity known by various synonyms, such as leiomyosarcoma, myosarcoma, and myoma malignum. It has been our aim to preserve an outlook as unbiased as possible by previous writers and to discover in what respects our evidence led us to agree with, in what respects to differ from, their conclusions.

The clinical material placed at our disposal by the kindness of our seniors consists of 40 cases of sarcoma of the uterus (see Table I). The original total would have been greater had we not excluded certain cases on the grounds of incomplete clinical and pathological data, and 2 cases of botryoid sarcoma with which this paper is not concerned. Microscopic sections were available for study in all except 5 of the cases, but these 5 are included on the ample pathological reports available.

INCIDENCE OF SARCOMA OF THE UTERUS

Statistical analysis of all benign and malignant neoplasms treated surgically or radiologically at the Chelsea Hospital for Women from the years 1922–36, and at the Middlesex Hospital from the years 1925–36, yields the facts summarised in Table II. We consider that the figure of 466 cases of carcinoma of the cervix, treated at the Middlesex Hospital for the 1925–36 period, as being disproportionately high; for this hospital, because of its cancer research department and other factors, attracts a number of cases that would not normally be included in the everyday practice of other institutions.

Of all mesodermal tumours of the uterus in our series sarcoma therefore comprises just over 1 per cent.; while to all malignant epithelial growths of the uterus, corpus, and cervix, sarcoma bears the ratio of 1 to 50, or 2 per cent. This is on the whole in agreement with the work of others, collected tables of whose figures appear in some of the papers on the subject (e.g., Vogt 1923).

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The ætiological importance of parity has in the past been stressed, notably by James Young (1933) who states that parity has an important predisposing influence upon the incidence of sarcoma, 75 per cent. of his cases being parous women. Wilfred Shaw (1936) on the other hand states that sarcoma of the uterus is quite unrelated to childbearing. In our series 21 were parous and 19 nulliparous, and we therefore agree with Shaw that parity is of little significance.

Certain clinical features about these cases are perhaps of interest and importance. The average age in our series is 53 years, which agrees with the figures of Evans (1920) and Bunten (1925) of 50 years each. Our youngest patient was aged 30, our eldest 68. According to decades the incidence was as follows:—

30–40 years ..	5 cases	50–60 years ..	11 cases
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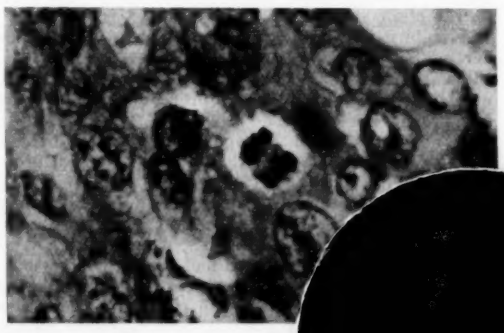

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TREATMENT

The treatment of uterine sarcoma is so well established that we have little to add. We would advocate a wide resection, a panhysterectomy with a ½ in. cuff of vagina, emphasising the simultaneous removal of both appendages. Surgery should be supplemented by a course of deep X ray therapy in all cases. There is however a point of great importance, which many have already stressed—namely, that all fibromyomata, whether removed by myomectomy or hysterectomy, should be immediately incised and macroscopically scrutinised by the surgeon. Ideally all fibromyomata should be histologically examined, for only in this way will a fuller comprehension of their varying grades of cellularity be acquired. If this ideal prove impracticable, at the least any fibroid showing suspicious degenerate areas should be submitted to histological examination. Such a routine procedure will from time to time bring to light an area of unsuspected malignancy as illustrated by the following case:—

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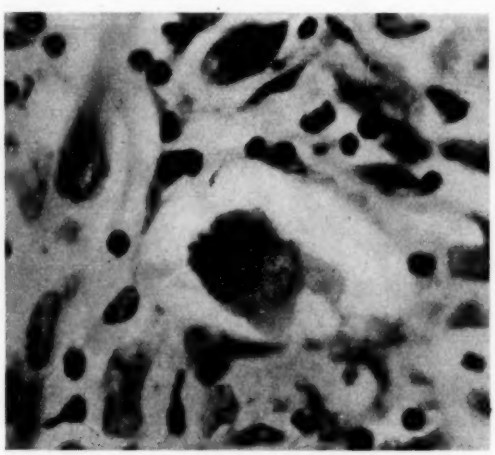

FIG. 2.—Sarcoma. Mitotic figure. (× 850.)

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Had the fibromyoma, as is so often the lot of these ugly ducklings of pathology, been cast into the bucket unexamined, the fate of this patient would doubtless have been very different. Hoenig (1932) records a similar case, in which a myomectomy was performed on a woman of 31 years; subsequent histological examination revealed a central area of sarcoma, hitherto unsuspected.

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The material on which the following remarks on the pathology of uterine sarcoma are based consists of sets of microscopic sections from 35 cases whose history and post-operative course are known; the gross specimen was available in 15 cases. In addition there were sections from 4 cases (with one macroscopic specimen) whose clinical history could not be ascertained, and which are not therefore included in the Tables. The material is completed by a number of cellular fibromyomata, the post-operative course of the majority of which was followed, and a few sections of undifferentiated carcinoma, included for discussion of differential diagnosis.

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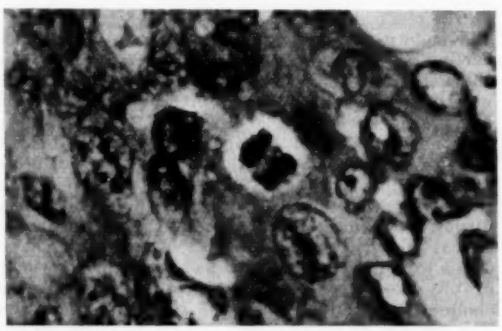

FIG. 1.—One typical mitosis in round-cell sarcoma. (× 850.)

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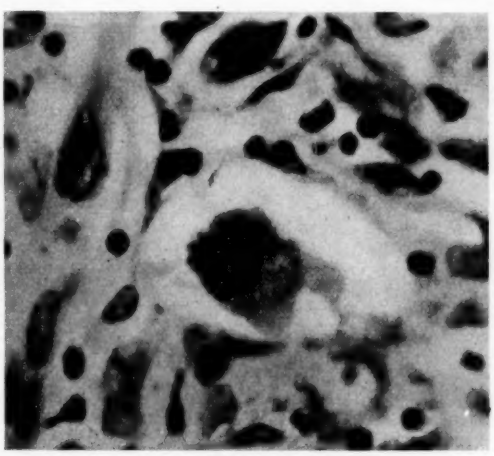

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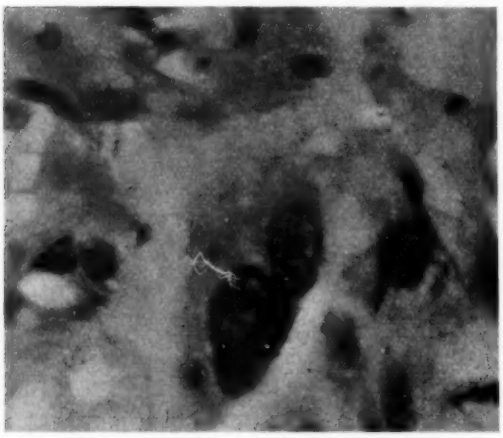

FIG. 4.—Sarcoma. Hyperchromatic giant cells in a degenerate area. (× 850.)

clinical progress. Lipsett (1935) would go so far as to divide sarcoma into three groups: metastasising, locally recurrent, and non-metastasising leiomyosarcoma. To wait for post-mortem examination, or at least for the appearance of clinical signs of recurrence, before classifying sarcoma is a proceeding too academic to appeal to the majority of clinicians and too much modified by different forms of treatment to satisfy the academic pathologist.

By far the most promising line of attack on this problem of classification has been made by Evans (1920). He divided his cases into three classes according to whether mitotic figures were abundant, moderate in number, or scarce; and his results are based on actual mitotic counts on the tissues he examined. He was able to get close correlation between these counts and the subsequent history of his patients, and this observation has more recently been confirmed by Kimbrough (1934). Of this method and its difficulties we shall have more to say, but it has the merit of dividing sarcomata into classes according to their clinical behaviour, and it forms a practical basis for discussion.

HISTOLOGICAL DIAGNOSIS

Many sections of uterine sarcoma leave no doubt in the mind of the histologist that what he sees is a sarcoma, and little more need be said of the familiar picture of highly malignant infiltrating growth. But there are also many in which he is puzzled to know whether the tumour is a cellular fibromyoma or a sarcoma of low-grade malignancy, and it is this difficulty which has led to the vast discrepancy both in the reported cure rates and in the reported percentages of fibromyomata showing sarcomatous change. Moreover, there are a few sections in which the less important distinction between undifferentiated carcinoma and sarcoma has to be attempted. In judging the former problem between fibromyoma and sarcoma the following points appear to us to be of importance:—

1. The presence and number of mitotic figures. If typical mitotic figures are seen, the tumour may be classified as a sarcoma.

2. The obliteration of the typical whorled pattern of the fibromyoma by cellular proliferation with which is bound up the question of decrease of the stroma. In the absence of mitotic figures this obliteration must be advanced before sarcoma is diagnosed; but there are many sarcomata *showing mitotic figures* which still possess the whorled pattern.

3. The cellularity of the tumour with irregularity of cell and nuclear shape. Cellularity alone does not indicate malignancy, for we have seen many cellular tumours with regular cell shape which we considered benign and whose subsequent clinical course confirmed this opinion.

4. Increase in size of the nuclei of tumour cells together with increased density of staining. We lay little stress on this point, if considered alone.

5. The precariousness of the blood-supply. We have, however, seen perivascular infiltration by a sarcoma in which the tumour cells were grouped round fully formed vessels having all the appearance of being part of the original uterine vascular system.

Important as these criteria are in assessing malignancy, it must be emphasised that we do not think that there is any hard and fast line between benign and malignant growths, and it is therefore clear that the experience of the pathologist may be a very weighty factor in diagnosis. Frank (1931) gives as a point in the differential diagnosis the appearance of "unrest" of the tumour; and that one of such experience can find no more precise term is an indication of the difficulty of the subject. Nevertheless, we wish to lay stress on the importance of mitotic figures as a guide, and this leads us to the inherent difficulties of Evans's method of mitotic counts.

TABLE II

Benign and Malignant Uterine Tumours

Chelsea Hospital for Women 1922–36. Middlesex Hospital 1925–36

Total cases.	Fibromyomata.	Carc. corporis.	Carc. cervicis.	Sarcoma.
Chelsea, 1922–36 ..	2775	254	839	22
Middlesex, 1925–36..	633	103	466	14
Total..	3408	357	1305	36

Evans himself appears to have counted not only typical mitoses but also atypical ones. While the former are very simple of recognition, the latter may be very difficult. Indeed, it seems impossible in many cases to be certain whether the hyperchromatic cell in question is an atypical mitosis or some form of nuclear degeneration. In examining our sections

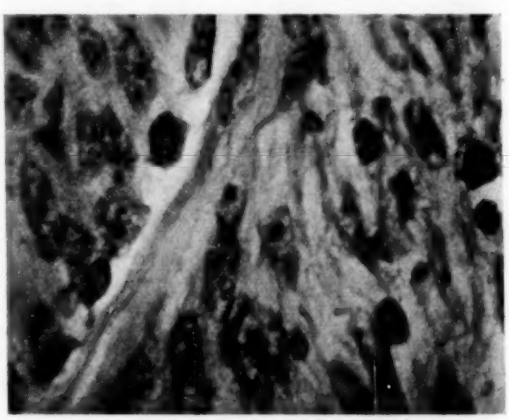

FIG. 5.—Fibromyoma, showing pyknotic nuclei, and hyperchromatism. Patient alive and well one year after myomectomy. (× 850.)

TABLE I—PARTICULARS OF THE FORTY CASES OF SARCOMA UTERI

Case.	Age.	Parity.	Symptoms.	Signs.	Duration of symptoms before admission.	Coincident fibromyomata.	Treatment.	Result.	Time from onset of symptoms to death.
1	61	0	Bleeding.	Tumour.	2 m.	Yes.	Subtotal hysterectomy.	Died.	2 m.
2	49	0	Pain.	"	8 m.	No.	Pan-hysterectomy.	"	1 yr. 3 m.
3	30	0	..	"	5 m.	Yes.	Myomectomy.	"	3 yrs. 5 m.
4	55	0	Bleeding.	"	10 m.	No.	Subtotal + bilateral salpingo-oöphorectomy.	Alive and well 12 yrs. later.	..
5	55	5	"	Polypus.	1 yr.	"	Pan-hysterectomy.	Recurrence 7 yrs. later (laparotomy).	Alive but dying of further recurrence.
6	44	0	..	Tumour.	3 m.	Yes.	Subtotal hysterectomy.	Died.	11 m.
7	65	1	Bleeding.	..	9 m.	Not stated.	Radium.	"	Exact date of death not known.
8	66	2	"	Tumour.	2 m.	Yes.	Pan-hysterectomy.	"	3 m.
9	58	6	"	"	3 m.	"	Local excision.	"	3 m.
10	47	4	"	"	Unknown.	"	Subtotal hysterectomy.	Alive and well 7 yrs. later.	..
11	63	5	"	"	2 yrs.	No.	Total hysterectomy + radium.	Died.	3 yrs. 3 m.
12	47	3	"	"	3 yrs.	Yes.	Subtotal hysterectomy.	"	3 yrs. 6 m.
13	31	0	Pain.	"	4 m.	"	Pan-hysterectomy.	Alive and well 6 yrs. later.	..
14	64	6	Bleeding.	"	1 m.	No.	"	Died.	2 yrs. 1 m.
15	63	6		Polypus.	1 yr.	"	"	"	5 yrs.
16	39	4	"	Tumour.	2 yrs.	"	Subtotal + rt. salpingo-oöphorectomy.	Alive and well 4 yrs. later.	..
17	62	0		"	4 m.	Not stated.	Pan-hysterectomy.	Died.	7 m.
18	58	0	"	"	1 m.	Yes.	"	"	2 m.
19	56	0	"	Polypus.	7 m.	"	"	"	10 m.
20	65	6	"	Tumour.	2 m.	"	Total hysterectomy.	"	10 w.
21	41	0	"	"	1 m.	"	Pan-hysterectomy.	Recurrence in lungs, dying 6 m. later.	..
22	59	0	..	"	2 m.	"	Subtotal hysterectomy.	Died.	2 m.
23	41	0	..	"	2 m.	"	Subtotal + bilateral salpingo-oöphorectomy.	Alive 3 m. later.	..
24	54	0	Pain.	..	2 m.	No.	Nil.	Died.	3 m.
25	68	0	Bleeding.	Polypus.	3 m.	"	Pan-hysterectomy.	"	4 yrs. 5 m.
26	52	2	"	Tumour.	1 m.	Yes.	Total hysterectomy.	"	2 m.
27	65	8	"	Polypus.	8 m.	"	Radium.	"	1 yr. 2 m.
28	46	3	"	Tumour.	2 m.	"	Subtotal hysterectomy.	"	1 yr. 8 m.
29	49	5	"	"	1 yr. 3 m.	No.	Subtotal + deep X ray.	Alive and well 5 yrs. later.	..
30	38	0	Retention of urine.	"	1 m.	Yes.	"	Died.	3 yrs. 3 m.
31	47	0	..	"	1 m.	No.	Subtotal + rt. salpingo-oöphorectomy.	"	1 yr. 3 m.
32	57	0	Bleeding.	"	4 m.	"	Pan-hysterectomy.	"	2 yrs. 4 m.
33	56	0	"	"	5 m.	Yes.	Pan-hysterectomy + deep X ray.	"	3 yrs. 1 m.
34	44	2	"	"	3 m.	"	Subtotal + deep X ray.	Alive 6 yrs. later.	..
35	51	2	..	"	2 m.	No.	"	Died.	7 m.
36	46	0	Traumatic rupture of uterus.	..	..	"	"	Alive and well 5 m. after.	..
37	60	1	Bleeding.	..	1 yr.	Yes.	Total hysterectomy.	Alive and well 4 m. after.	..
38	49	2	Discharge.	Polypus.	5 m.	?	Deep X ray only.	Alive but dying 3 m. later.	..
39	68	3	Bleeding.	Tumour.	7 m.	No.	Pan-hysterectomy.	Alive and well 4 m. after.	..
40	39	1	"	Polypus.	4 m.	"	"	Alive 8 m. later.	..

w. = weeks; m. = months; yr. = year.

we have attempted to assess the number of typical mitoses, taking as criterion such mitotic figures as we felt could be demonstrated to students as characteristic (Figs. 1 and 2). We have thus side-stepped the difficult decision of what was, or what was not, an atypical mitotic figure without, as subsequent Tables will show, losing that correlation between pathology and clinical course which is such a striking feature of Evans's work. Evans tacitly admits this difficulty, for he has shown his figs. 2, 3, and 4 as examples of atypical mitosis in the legend, while in the body of his paper he refers to the same figures as examples of hyperchromatic and giant forms. The accompanying photographs show some of these curious and difficult cells (Figs. 3, 4, and 5), and it is at least evident that some form of nuclear upheaval is occurring; but whether the pangs of birth or death we cannot presume to decide.

(To be concluded)

THE NEWER ELECTROCARDIOGRAM DENOTING RIGHT BUNDLE-BRANCH BLOCK

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(From the Cardiac Department the London Hospital)

(Concluded from p. 1131)

Pathological Report on Case 7 *by*

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NECROPSY

Summary: Heart failure; ischæmic fibrosis of myocardium and of auriculo-ventricular bundle; cardiovascular hypertrophy; hyperpiesia.

Very stout, almost edentulous woman. Great adiposity of pericardium, and of outer two-fifths of myocardium of right ventricle. Dilatation and slight hypertrophy of right auricle and ventricle; considerable hypertrophy of left ventricle. Numerous petechiæ in pericardium of back of left auricle and ventricle; a few on left side of interventricular septum. No active or healed valvulitis. Considerable atheroma in aorta and carotid arteries; medial calcification, very severe atheroma, and occlusion by organised thrombus of tortuous dilated splenic artery opposite tail of pancreas; numerous flecks of atheroma in right horizontal and anterior descending coronary arteries; no stenosis of superficial coronary arteries. Hypertrophy of media of larger arteries in organs; myo-atrophy and fibrosis of media and of hypertrophied intima of many small arteries. Rusty old infarct in spleen. Scars of ischæmic atrophy beneath capsules of kidneys. Great œdema and congestion of lungs. Collapse of lower and posterior half of lower lobe of right lung and of one-third of lower lobe of left lung. Right pleural effusion (16 oz.). Congestion of kidneys. Firm congested and œdematous spleen. Conspicuous congestion and confluent back pressure atrophy of liver. One mixed stone in fundus of greatly dilated, fibrotic gall-bladder. Mucous catarrh of stomach. Thymus masked by fat.

Weights.—Body, 70·2 kilo (length 144 cm.); brain, 1204·9 grammes; liver, 1559·2 g.; heart, 453·6 g.; kidneys, 276·4 g.; spleen, 170·1 g.; pancreas, 63·7 g.; thyroid, 15 g.; suprarenal bodies, 10·8 g.; pituitary, 0·8 g.

Macroscopically the valves of the heart were thin and transparent. No abnormality could be detected in the neighbourhood of the node and limbs of the auriculo-ventricular bundle.

MICROSCOPIC EXAMINATION

METHODS

Pieces of the kidney, aortic arch, splenic artery, and myocardium from the upper third of the anterior wall of the left ventricle, the centre of the anterior wall of the left ventricle with the anterior papillary muscle, and the centre of the outer wall of the right ventricle were embedded in paraffin, while a portion of kidney and of myocardium from the lower third of the left ventricle were cut upon the freezing microtome for Herxheimer's method.

The auriculo-ventricular bundle was examined in the following way. After the heart had been opened and fixed in formaldehyde an oblong slab, 4·5 cm. from above down and 3·3 cm. wide, was cut from the inner wall of the right auricle and ventricle through to the aorta and left ventricle. The upper border was approximately parallel to the origin of the tricuspid valve and 1 cm. above it; the posterior vertical border was slightly in front of the Thebesian valve, and the anterior was in front of the moderator band. This slab was divided into three blocks, each 1·5 cm. from above down. After being embedded in paraffin the blocks were cut from above down in serial sections of 10μ. In the uppermost block 6 sections were kept for staining and 34 were cast, so that the interval between each group of stained sections was 340μ. On microscopic examination the lesions in the auriculo-ventricular bundle were found to be so focal that this interval appeared to be dangerously wide; consequently in the lower two blocks only 17 sections were cast, the interval between each group of stained sections being reduced to 170μ. The sections were stained with Ehrlich's hæmatoxylin and eosin, Weigert's iron-hæmatoxylin and van Gieson, Weigert's fuchselin and neutral red and Mallory's phosphotungstic-acid hæmatoxylin. In order to make accurate notes upon the changes, drawings were made with a projection apparatus of the first of each group of sections until the two limbs of the trunk were completely separated.

According to the number of sections cut, the length of the three combined blocks had in the process of being embedded in paraffin shrunk from the original 4·5 cm. to 3·35 cm.

KIDNEY, AORTA AND SPLENIC ARTERY

The changes are incorporated in the Summary of Necropsy.

VALVES

The aortic and tricuspid valves are included in the serial sections. They contain no vessels, and show no evidence of active or healed inflammation.

MYOCARDIUM

There is in the myocardium a considerable amount of lipoidaffin pigment around the nuclei. In the slab of tissue cut in serial section for examination of the auriculo-ventricular bundle there are a few scattered, small areas of fibrosis in the lower 6 mm. of the mesial walls of the auricles, and a larger area in the lower extremity of the mesial wall of the right auricle. In the uppermost part of the interventricular septum a large area of fibrosis involves the posterior margin of the pars membranacea septi and extends backwards for a considerable distance, another large area lies in the septum still further back, while a small area occupies the anterior margin of the pars membranacea. At 2·8 mm. beneath the first appearance of the interventricular septum the fibrosis is at its maximum, nearly two-thirds of the muscle behind the pars membranacea being fibrosed. At 6 mm. it has become very much less. It still continues, however, in both margins of the pars membranacea and in parts of the septum behind, particularly beneath the endocardium of the right ventricle, until the pars membranacea is passed. Then small patches are found in very similar positions until 10·9 mm. beneath the top of the interventricular septum. In the septum beneath this level and in the two segments from the anterior wall of the left ventricle areas of fibrosis

are very scanty and small. In the segment of the outer wall of the right ventricle they are not present.

The fibrosis consists of a dense collagenous tissue in which there are very few spindle nuclei. It replaces the muscle fibres entirely or encloses a variable number. In the larger areas of fibrosis in the upper part of the interventricular septum and occasionally in areas of fibrosis elsewhere there are streaks and large irregular patches which are stained deeply by Ehrlich's hæmatoxylin. The streaks sometimes correspond clearly to muscle-fibres. The larger patches consist in part of stone-like, isotropic plaques and groups of irregular lumps. Calcification was suspected, but the streaks and patches are not stained by silver nitrate and do not evolve gas in hydrochloric acid; attempts to form gypsum and calcium oxalate crystals in them failed. They give a deep Prussian blue and a more diffuse but paler Turnbull's blue with hydrochloric acid after potassium ferrocyanide and ferricyanide respectively. They are apparently areas of impregnation with ferric and ferrous iron of muscle-fibres and collagenous tissue, and they recall Gandy-Gamna nodules in the spleen.

As the ramus septi fibrosi of the right coronary artery passes forwards in the interauricular septum it shows an increasing degeneration of the media, which becomes so great anteriorly that the muscle-fibres are reduced to two or three layers or are completely absent. The intima shows a hypertrophy in the form of a longitudinal musculo-elastic coat which increases in depth as the media narrows. Degeneration of the hypertrophied intima is shown by sparsity of muscle-fibres and abundance of fibrous tissue. The artery gives to the node a relatively slender branch of normal structure. It then turns down into the upper part of the interventricular septum. The media has now lost all muscle-fibres and is merely a narrow zone of fibrous tissue, the wall of the artery consisting almost entirely of a thick, degenerated musculo-elastic intima. The artery gives off branches which show similarly severe degeneration, and from 1·6 mm. to 3·2 mm. beneath the first appearance of the interventricular septum its lumen becomes almost completely occluded by the degenerated hypertrophied intima. As described above, it is between these levels that fibrosis of the myocardium is greatest. At lower levels in the septum and in the sections of the anterior wall of the left ventricle relatively few arteries show degeneration. There are, however, occasional small arteries in which the media is absent and the lumen is narrowed by a degenerated intimal hypertrophy. Such degeneration is often seen to occur suddenly in the course of an artery of normal structure.

AURICULO-VENTRICULAR BUNDLE

A few fibres of the node of Tawara introduce the special conductive system when 6·4 mm. have been cut from the uppermost block. The measurements given below are distances from this section, the conductive system being followed for 2·71 cm.

The *node* rapidly enlarges and is seen for 1·63 mm. It shows no abnormality.

The *trunk* is first seen at 0·4 mm. It passes forwards almost horizontally in a canal in the central fibrous body to 1·6 mm. During this almost horizontal course it appears to be perfectly normal. At 1·6 mm. it has turned more steeply downwards to follow the slope of the upper margin of the interventricular septum where this forms the posterior boundary of the pars membranacea septi. It is seen as a lenticular mass and lies immediately in front of the upper margin of the septum, which is met for the first time. As described above, the muscle-fibres of this part of the septum are almost completely replaced by fibrosis. The trunk, or part of it, continues to lie immediately in front of the fibrotic upper margin of the interventricular septum until at 8·13 mm., having given off all fibres of the left limb, it has become the right limb and lies below and to the right of the upper margin of the septum. As it lies immediately in front of the fibrotic margin of the septum it shows the following changes. At 1·6 mm. dense fibrous tissue almost completely replaces the muscle-fibres of the right two-thirds of its posterior fifth, and extends forwards to replace many fibres in the rest of its posterior third. At 2·4 mm. the trunk has become triangular with its apex anterior. The posterior fifth, excepting the left posterior angle, is fibrotic. The replacement of muscle by fibrous tissue increases and extends forwards, while the trunk shrivels. At 2·8 mm. the posterior two-thirds are fibrosed, except the left posterior angle. At 3·24 mm. the whole trunk is fibrotic, shrunken and devoid of muscle, except the anterior fifth and the right posterior angle, in both of which there are a few fibres, and the left posterior angle, in which there is a considerable number of fibres. At 3·6 mm. the trunk is much larger again, but the anterior extremity is completely fibrosed and there is much fibrosis in the rest of the anterior half. At 4·0 mm. fibrosis is confined to small areas in the anterior and right posterior extremities. After this, until the depth of 7·2 mm., there is in almost all sections fibrosis of the right posterior angle, sometimes associated with impregnation with iron. Between this level and the termination of the trunk at 8·13 mm. there is fibrotic replacement of bundles of muscle-fibres in its left margin, from the centre to the anterior extremity.

The *left limb* is not a compact limb branching from the trunk, but is a series of small bundles of muscle passing backwards beneath the left endocardium from the left side of the trunk between the levels of 2·4 mm. and 8·13 mm. Its origin is at first from the left posterior angle of the triangular trunk, but later from the left side and finally from the anterior extremity. The first fibres encountered are separated from the trunk by a band of fibrosis which passes to the left and slightly forwards from the fibrosed upper margin of the muscular interventricular septum across the endocardium of the left ventricle. From 2·8 mm. to 4·03 mm. this is absent, and the muscle-fibres appear to pass without interruption from the trunk. But from this level to the end of the origin of the left limb at 8·13 mm., the band of fibrosis is again present. The fibrosis is rarely dense, and consists chiefly of delicate fibrils, but stout collagen fibres run across it to the left. These are fibrosed bundles of muscle-fibres from the trunk, as is shown by their being sometimes continuous with healthy muscle-bundles on one or other side of the band or by their occasionally containing one or two muscle-fibres or iron impregnated strands of about the size of a muscle-fibre. The band of fibrosis is a zone of fibrotic atrophy of the muscle bundles rather than a zone of general fibrosis. Areas of fibrosis are seen in only a very few of the bundles of fibres of the left limb as they pass down beneath the endocardium of the left ventricle to the lower limit of the serial sections.

The *right limb* is completely separated from the left at 8·13 mm. At 17·36 mm. it has sunk so far beneath the endocardium as to lie deep to the level of the bundles of ventricular muscle on either side. At 17·62 mm. it definitely enters its intramuscular course, lying 1 mm. from the ventricular cavity and being separated from the endocardium by a continuous layer of muscle. During its downward course there has been a great reduction in its size and in the number of its fibres, but this reduction is normal, being associated with no alteration in structure. Between 19·24 mm. and 21·07 mm. however there is a destructive reduction of the limb. At 19·24 mm. the limb contains sections of about 180 muscle-fibres and there is no fibrosis. A small fibrotic area is present at 19·26 mm. The fibrosis increases, and from 19·69 mm. to 19·95 mm. the lenticular limb has become a mere strand of collagen and elastic fibres, different cross sections containing from 7 to 25 scattered muscle-fibres, almost all of small size. The number of fibres then increases rapidly, while fibrotic areas become focal and fewer; at 21·07 mm. the limb is again a stout lenticular bundle free from all fibrosis and containing some 207 large and small fibres. At 22·45 mm. a group of over a dozen epithelioid histiocytes lies in its centre. At 22·7 mm. it has become subendocardial again. At 23·39 mm. the first of three branches is seen, and it contains a small area of fibrosis.

Arteries.—No abnormality was detected in the artery to the node and trunk and in the arteriole in the right limb.

REMARKS

The left limb of the auriculo-ventricular bundle arises from the trunk at levels between 2·4 and 8·13 mm. from the first appearance of the node. As the fibres pass from the trunk, however, they are destroyed by fibrosis, except at 2·8 to 4·03 mm. At and above

these levels the left posterior angle of the trunk, from which fibres pass to the left limb, is largely though not entirely free from the fibrosis which spreads through the trunk from behind forwards between the levels of 1·6 mm. and 4 mm. A small portion, therefore, of the path between the node and the left ventricle appears to have escaped interruption. If the conducting fibres in the trunk keep in approximately the same relative positions, then all the fibres to the right limb would be interrupted by the fibrosis which spreads through the trunk from behind forwards between the levels of 1·6 and 4 mm. Even if this fibrosis of the trunk does not cut off all impulses from the right limb, complete interruption of the right limb appears to have been caused by the fibrosis during its intramuscular course at levels between 19·69 and 19·95 mm.

There are no characteristics by which any difference can be recognised in the age of the fibrosis in the different sites given above.

The fibrosis appears to be ischæmic and the result of severe arterial degeneration. It thus resembles the fibrosis in the kidney, while the infarct in the spleen is the result of occlusion by thrombosis of the very degenerate splenic artery. Small areas of fibrosis are scattered throughout the myocardium, but extensive fibrosis is confined to the upper 10·9 mm. of the interventricular septum. This is explained by the exceptionally severe degeneration of the large ramus septi fibrosi of the right coronary artery. The artery shows severe degeneration before it gives off the branch to the node and bundle. After giving off this branch it passes down to the upper part of the interventricular septum, where its branches are very degenerate and it itself is almost occluded by degenerated hypertrophied intima. The branch to the node, and the artery and arterioles within the node, trunk, and right limb do not show degeneration. The fibrosis in these structures is possibly due to the degeneration of the ramus septi fibrosi before the origin of the branch to the node. It appears, however, to be closely related to fibrosis of the adjacent myocardium, and to be thus due to degeneration of the arteries of the myocardium.

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NOTTINGHAM GENERAL HOSPITAL.—Mr. W. G. Player has promised this hospital a further donation of £42,000 to provide additional beds for women and extra accommodation for the nursing staff, and make alterations and improvements to the kitchens and laundries. The pay-bed block is nearing completion, and the cost of its furniture and equipment is being defrayed by Sir Julien Cahn.

FURTHER EXPERIENCE WITH HEPARINISING THE DONOR IN BLOOD TRANSFUSIONS

BY PER HEDENIUS, Med. Lic.
OF ST. GÖRANS SJUKHUS, STOCKHOLM

EVERY clinician to-day regards blood transfusion as life-saving in certain cases, but opinions about its scope vary from the most cautious to the most extravagant. This lack of unanimity is in some degree due to there being two schools of thought among proponents of transfusion—those who will prescribe only a whole-blood transfusion and those who mix some anticoagulant with the donor's blood. For the first group, blood transfusion is of course a more serious procedure, which is resorted to only when urgently needed, since the possibilities of its failure are greater than when anticoagulants are used. The adherents of the second school often agree that the whole-blood transfusion is ideal, but because of its technical difficulties, they prefer to work with non-coagulating blood.

In my opinion the following conditions should be fulfilled in an ideal blood transfusion: (1) the technique should be so simple that no lengthy preparation or large staff is necessary; (2) it should not injure the donor or recipient; (3) it should be possible to transfer the desired amount of blood; (4) it should be possible to perform the transfusion with the donor and recipient in separate rooms; and (5) whole blood should preferably be used.

As regards the technique, whole-blood transfusion does not entirely meet the requirements, since it necessitates good technical training and a relatively large staff, because it must be effected so quickly. It not infrequently miscarries, thereby diminishing the chances of transferring the desired amount of blood. In this respect the addition of an anticoagulant offers a certain advantage, but even this cannot prevent the blood from coagulating in the cannula in the donor's vein, which may necessitate a renewed puncture and needless waste of time. The Athrombit method has an advantage here, but this is balanced by its cumbersomeness, because of the direct communication between the needle and the flask.

The second requirement was that neither the donor nor recipient sustain any injury. This means that no veins are dissected out. Nowadays the donor's vein is only exceptionally dissected out, but in whole-blood transfusion the normal method includes dissection of the recipient's vein. Even with other methods, indeed, this procedure is often required. Further the recipient should suffer no ill effects from the transferred blood, and here the whole-blood transfusion is the best, since it does not introduce any foreign agents into the body of the recipient and the blood received is not diluted in any way. Citrate is the most common of the various anticoagulants that the adherents of the second school add to the blood taken in order to facilitate the technique. It has, however, been thought—and probably cannot be denied—that in a proportion of cases by no means negligible the use of citrate has given rise to shivering fits, sometimes with slight fever. Even if these symptoms are not considered worthy of much attention, they nevertheless indicate that the citrate transfusion is not to be regarded as a whole-blood transfusion. In order to avoid them French authors have suggested

alkalising the blood by adding a mixture of sodium carbonate and sodium phosphate, which method is reported to result in half as many cases, or about 4 per cent., of shivering and temperature rise as observed in citrate transfusions.

In whole-blood transfusions the ideal amount of blood is often not reached because of the technical difficulties which arise when the donor's veins are of imperfect quality. It should also be possible in cases, where it is desirable, to have the patient in another room than the donor; but this cannot be done in direct transfusions, an inconvenience which lessens the possibilities of using whole blood. Finally, all probably agree that the whole-blood transfusion would be the most advantageous if only it allowed of simpler technique.

USE OF HEPARIN

The new method of blood transfusion that I described last year has been tested and found valuable. More than 150 transfusions have now been carried out in this way, some at Surgical Clinic No. II (head: Dr. K. H. Giertz) in Sabbatsberg Hospital, where Dr. Crafoord introduced the method, and some in the surgical clinic of the Serafimer Hospital (head: Prof. Söderlund), where it was introduced by Dr. Schuberth. It is now used as a routine in both these hospitals, having replaced the citrate and whole-blood methods. The transfusions in 50 per cent. of the cases were performed during or within the first six hours after operations causing anæmia. Transfusions were effected in 20 per cent. of the cases because of post-operative complications (hæmorrhage sometimes combined with septic conditions) especially after cancer operations, in 5 per cent. because of bleeding stomach ulcers, in 15 per cent. because of chronic septic conditions, and in per cent. because of serious anæmia of pernicious or chronic secondary type. In 3 per cent. of cases the transfusions were done before serious operations. The procedure has not been changed essentially since my last publication. By injecting the donor with a sterile solution of heparin * before taking the blood, non-coagulable blood is obtained for a certain length of time, depending upon the amount of heparin injected. The blood obtained is whole blood and has no anti-coagulant effect on the recipient's blood. This is to be noted, for if heparin is used in vitro instead of citrate it may lengthen the recipient's coagulation-time if the amount of heparin employed is too large in relation to the amount of blood actually obtained. Since heparin of a constant strength and purity may now be obtained and may be bought in sterile solutions (up to 5 per cent.), there is no longer any difficulty in dosage, since a certain amount of heparin keeps the blood fluid for a definite space of time. In order to obtain a distinct prolongation of the time of coagulation, demonstrable with the present methods, a certain threshold dose must be exceeded. This is about 0·25 mg. per kg. body-weight when heparin is given intravenously. The transfusion should be done within half an hour of the injection and with this time-limit 1 mg. of heparin per kg. body-weight of the donor will be required.

A sterile 5 per cent. heparin solution containing 0·25 per cent. of tricresol is used. The amount of heparin necessary is injected intravenously into the donor, preferably in the arm not to be used in the transfusion. Heparin has been proved to be non-toxic in experiments upon rabbits, in which up to 100–150 mg. per kg. body-weight was injected intravenously. In man single doses up to 4 mg. per kg. body-weight, or smaller doses given at intervals of some hours, have proved to be quite harmless. Heparin is quickly removed from the blood stream and after a dose of 1 mg. per kg. the time of coagulation—diminishing rapidly at first—returns to its original figure in about 1½ hours.

Ten minutes after the donor has been injected with heparin, the transfusion may begin. Any method of transfusion can be used. The surgeons who performed the above-mentioned transfusions used as a rule a Jeanbreau flask; I myself have given transfusions with the Rotanda syringe, both directly and after the blood has been allowed to run down into a sterile flask. Even an ordinary 50 c.cm. syringe has been employed. In using syringes it is advisable to moisten the piston with a drop of sterile paraffin in order to prevent cellular destruction and kinase-production, which otherwise takes place along the walls of the syringe and makes the piston go hard.

There is no tendency to the formation of clots in the cannulas inserted either into the donor or the recipient during the transfusion and no extra difficulties are caused if the donor's veins are small, since the blood flow does not stop even if it has to be slow. The coagulation-time of the donor is chiefly lengthened during the first hour after the injection of the heparin, but, on the other hand, his bleeding-time is not lengthened, only a very serious accident would be dangerous for him if he was healthy otherwise.

The blood obtained by the recipient does not lose any of its whole-blood properties, for the dose of heparin he receives in the transfusion does not reach the threshold value 0·25 mg. per kg. body-weight. The coagulation tests carried out have not shown any lengthening of the recipient's coagulation-time, but usually the slight shortening thereof which is often wanted. Not even in a lung extirpation, when three rapidly repeated transfusions were given with life-saving effect, could any increased bleeding be found which might have been traced to the transfusions. None of the patients have suffered any subjective unpleasantness or any fever from the transfusion. In a couple of cases small clots were observed on the walls of the Jeanbreau vessel, and in one case the transfusion had to be discontinued because of coagulation in the needle; but in all these cases the transfusion had taken longer than the rather small doses of heparin used on these early occasions would allow. Where the blood is not tapped off into Jeanbreau flasks, it is advisable to run it down the sides of the transfusion vessel in order to avoid air bubbles, which easily bring about coagulation.

SUMMARY

This paper is based on the result of 150 transfusions carried out after the intravenous injection of heparin into the donor, as described last year. Such an injection reduces the coagulability of the donor's blood, but not that of the recipient. The method described fulfils all the requirements of an ideal blood-transfusion method. It allows the use of whole blood in its natural state and does not involve the use of any substances foreign to the body. It has all the advantages of the citrate methods but none of the disadvantages, such as a possible excess of anti-coagulant when the expected amount of blood is not obtained. The transfusion can be performed with any equipment available and the technique should

* Heparin, which is now believed to be a mucoitin poly-sulphuric ester (Jorpes and Bergström, 1937), is a powerful anticoagulant. It is marketed in Sweden by Firma Vitrum, Stockholm.

prove of value particularly in performing transfusions away from hospitals.

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THERAPEUTIC TRIALS ON PELLAGRINS IN EGYPT

BY P. ELLINGER,* A. HASSAN, AND M. M. TAHA

(*From the Lister Institute, London, and the Biochemical Department of the Medical Faculty of the University, Cairo*)

NUMEROUS attempts have been made to cure pellagra with material rich in Goldberger's pellagra-preventive dietary factor since in 1926 he put forward the theory that lack of it caused the disease.

Spies and his co-workers (Spies and de Wolf 1933, Spies 1934 and 1935, Spies, Chinn, and McLester 1937) treated pellagrins in hospitals with a good hospital diet, complete rest, and different preparations considered to contain an abundance of the pellagra-preventive factor, such as dried yeast, liver extract, desiccated hog's stomach, or wheat germ. Landor and Pallister (1935) reported the successful treatment of pellagrous prisoners in Johore with Marmite or with dried or autoclaved yeast. Sydenstricker and Armstrong (1937) showed by means of statistics that administration of yeast to pellagrins in Augusta, U.S.A., reduced the mortality-rate from 33·7 per cent. to 25·3 per cent. Birch, György, and Harris (1935) mentioned unsuccessful therapeutic trials by Spies and Chinn and by Dann, Ruffin, and Smith with parenteral administration of pure Lactoflavin (cf. also Dann 1936). Simpson (1935) described a successful treatment with a protein-free concentrate prepared from egg-white.

Parallel with the above clinical trials attempts have been made in the last few years to elucidate the therapeutic effect of different preparations from yeast and from liver by the study of diseases caused by vitamin B_2 deficiency in rats, dogs, and other animals. In these investigations there is much confusion concerning the preparations used by the different workers and their connexion with the dietary factor preventing human pellagra. In order to throw some new light on these points the observations presented in this were made among Egyptian pellagrins.

RESULTS

Two kinds of difficulties were encountered in these trials. In the first place the judgment of the results is complicated by the fact that less severe cases of pellagra occasionally recover without treatment. Only severe cases were therefore chosen, and the treatment was regarded as successful when the clinical symptoms and the increased porphyrin excretion either disappeared completely or were considerably reduced in the course of the treatment. A complete and lasting cure could not be expected as the treatment did not remove the causes of the disease. In most cases after treatment the factors exciting the pellagra remained unchanged. This reappearance of pellagrous symptoms was also observed by Spies and de Wolf (1933) in 37 per cent. of their cases when the treatment was discontinued. The second difficulty lay in the fact that the therapeutic effect of the material examined can only be judged correctly when the diet and the condition of life remain unchanged during the treatment. With treatment in hospital even the rest and the lack of physical work might essentially influence the course of the disease and even when orders are given for patients to receive their previous home diet they cannot be restrained from getting the better hospital food either from friends or from fellow patients in the same ward. We were, therefore, compelled to undertake our therapeutic trials in the villages where the patients continued to do their usual work and to take their usual diet.

The treatment was carried out in four villages of the central Nile Delta under the supervision of the local barbers and the control of the inspector of health of the district, and the effects were judged by repeated inspections by ourselves. As was to be expected some of the pellagrins disappeared during the test and could not be traced; nevertheless, nearly 90 per cent. of those treated were collected for reinspection. In a few cases the patients did not take the preparations regularly. The substances used, the daily dose, its equivalent in dried yeast, and the results are shown in the Table.

TABLE SHOWING EFFECT OF THERAPEUTIC SUBSTANCES

No.	Material.	Daily dose.	Equivalent of dried yeast.	Time (days).	Cases.	Results.				
						Symptoms.			Porphyrin excretion.	
						Cured or much imp.	Partially imp.	No change.	Reduced.	Not reduced.
1	Protein-free egg-white concentrate.	100 c.cm.	—	15	2	1	—	1‡	1	1‡
2	Dried whey.	50 g.	—	17	3	1	—	2	3	—
3	„ yeast	30 g.	—	17	10	9	1	—	10	—
4	Autoclaved yeast extract.	60 c.cm.	30 g.	17	3	2	1	—	3	—
5	Fuller's earth adsorbate from (4).	4 g.	36 g.	17	3	1	1	1	2	1
6	Eluate* from (5).	30 c.cm.	60 g.	15	2	1§	—	1‡	1§	1‡
7	Lactoflavin† + filtrate from (5).	30 mg. + 60 c.cm.	160 g.‖ 20 g.	17	5	3	—	2‡	3	2‡

* Almost free from lactoflavin.

† We wish to express our gratitude to Messrs. Hoffmann-La Roche and Co. A.G., Basle, and in particular to Dr. M. Guggenheim, Basle, for kindly supplying us with crystallised lactoflavin.

‡ Refers to one refractory case that received successively different treatments.

§ Case shown in photograph. ‖ Cf. Copping and Roscoe (1937).

Imp. = improved.

All the materials were given orally. The egg-white concentrate was used also by Simpson (1935). All the yeast fractions described under (5), (6), (7) were prepared according to Edgar and Macrae (1937), who tested them on rats. In two non-pellagrins an increased porphyrin excretion disappeared after treatment with dried yeast in daily doses of 30 g. for 12 days.

* Research fellow of the Society for the Protection of Science and Learning, London, assisted for this work by a grant from the Medical Research Council, London.

DISCUSSION

In contrast to previous experiments on pellagrins our observations appear to be the only ones in which the effect can be attributed exclusively to the administration of the therapeutic material. In all the other experiments there was an alteration either of the diet or of the condition of life, or of both—this is probably as important as the administration of the therapeutic material. Spies (1931 and 1932) reported a considerable improvement of the general condition and in the skin symptoms in pellagrins kept on a pellagra-producing diet. These improvements should be regarded as a consequence of the complete rest in the hospital. Results obtained from the simultaneous alteration of more than one unknown factor cannot be decisive. The results of our experiments, however, were performed by the exclusive alteration of one factor only—the administration of the therapeutic material.

In the experiments with egg-white concentrate and dried whey the doses may have been too small, and bigger doses of these materials might have had a more satisfactory effect. The results with these two materials are inconclusive and need repetition. With yeast and yeast preparations the doses were adequate, 30 g. of dried yeast daily or a corresponding dose of the autoclaved yeast extract being enough in the successful treatment of 13 cases. The trials with the three other preparations of yeast are too few and their results too variable to permit of definite conclusions and had to be repeated. The treatment with fuller's earth eluate and with lactoflavin and the fuller's earth filtrate seem to be promising. The results with the adsorbate are very variable, probably because the eluation of the effective substances was not satisfactorily performed in the intestines of the different patients. Variable results were also obtained with this material by Edgar and Macrae (1937) on growing rats probably for the same reason, while fuller's earth eluate and fuller's earth filtrate, together with lactoflavin, were found by these authors to produce a submaximal growth of rats deprived of vitamin B_2.

Variable results are not surprising in these therapeutic trials seeing that the unfavourable conditions of life related to the onset of the pellagra remained unchanged during the treatment. Even in the observations of Spies and his co-workers and of Sydenstricker and Armstrong, where the treatment was carried out under much better conditions, only a certain proportion of the pellagrins improved or were cured. It may never be possible to find a therapeutic material which will be successful in every case; some of the pellagrins will always be refractory. Therefore, in order to judge the result of the treatment correctly, trials are necessary on a large number of patients with statistical evaluation of the results. As we have already described (Ellinger, Hassan, and Taha 1937) pellagra in Egypt seems to be due to the coincidence of porphyrinuria caused by parasitic intestinal infection and a deficiency of some constituent of the vitamin B_2 complex in the diet, and of some extrinsic factor such as hard physical work in the open air. Parasitic infection of the gut was present in almost every case of pellagra observed. The malabsorption caused by this condition must have been still present during the treatment. The fact that in some cases our therapeutic materials were successful, in spite of this malabsorption, is proof that the material contained the pellagra-preventive factor either in a condition allowing an easy absorption or, what is more probable, in such great an abundance that a sufficient amount could yet be absorbed.

Boy aged 14. Second attack of pellagra. Diet: maize bread; vegetables 2–3 times weekly. Parasites: ancylostoma and oxyuris. Treatment: 30 c.cm. daily of an eluate from fuller's earth adsorbate fraction from yeast extract.

A. April 24th: Before treatment. Severe erythema, desquamation, roughness, and pigmentation of the skin of cheeks, nose, neck, and hands. Severe stomatitis.
B. May 1st: After a week's treatment. Erythema of the face has disappeared. Little desquamation, roughness, or pigmentation on cheeks and nose; much desquamation and some roughness on neck and hands. Severe stomatitis.
C. May 8th: After a fortnight's treatment. Very little desquamation or pigmentation on face and neck. Some depigmentation on the hands and very little desquamation on the forearms. Stomatitis has disappeared.

CONCLUSIONS AND SUMMARY

Our experiments showed that 30 g. of yeast or a corresponding dose of an autoclaved extract of yeast will usually cure Egyptian pellagrins without any alteration of their condition of life or diet. Promising results were obtained from trials with corresponding doses of an eluate from a fuller's earth absorption of yeast extract and of the filtrate from this absorption given together with lactoflavin, but further trials on a larger scale are needed. Inconclusive results were obtained with fuller's earth adsorbate from the yeast extract, with an egg-white concentrate and with dried whey. The porphyrinuria when present in pellagrins or non-pellagrins was reduced by treatment with dried yeast.

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GASTROMEGALY DUE TO ARTERIO-MESENTERIC OBSTRUCTION OF THE DUODENUM

By Seton Campbell, M.B. Camb., D.C.H.

LATE WANDER SCHOLAR AND REGISTRAR IN THE CHILDREN'S DEPARTMENT, WESTMINSTER HOSPITAL, LONDON

The term gastromegaly was suggested in 1930 by Miller and Gage for a syndrome in children comprising loss of weight, projectile vomiting, and enlargement of the stomach with visible peristalsis. They reported 9 cases and since then have written two further papers on the subject (1932, 1935). The following case is reported because it represents a classical example of this syndrome.

Male, aged 2 years. First pregnancy; normal labour at term; birth weight 5 lb. Breast-fed for six months.

History.—Appeared to be quite well till aged 4½ months when he vomited for the first time. A month later he vomited again, and since then has vomited regularly 1–4 times daily. The vomit is large, projectile, and foul-smelling, indicating stasis. On three occasions small amounts of green material have been seen in the vomit. His mother noticed that he had a large stomach at 9 months. Since the age of 6 months his diet has consisted of cow's milk and water, rusks, groats, and spinach, and lately his appetite has improved. He teethed at 7 months and walked at 18 months. The bowels have always been constipated, and the stools have been small and green.

Physical examination.—Small child weighing 17 lb.; psychologically negativist. Dark skin (is of South African and Jewish parentage) and not pale; no evidence of rickets; no dehydration. Inspection of the abdomen revealed a grossly dilated stomach whose outline could easily be made out, and which reached well over to the right side. Huge peristaltic waves could be seen running from under the left costal margin to the right side of the abdomen. These began about five minutes after a feed and could easily be felt with the hand. No reverse peristalsis was seen. The vomit was large and projectile. A splash was not elicited and no tumour was felt. The descending colon was palpable and filled with fæces. The remainder of the examination was negative.

Investigations.—Nothing abnormal in the urine. Blood count shows a mild low colour-index anæmia. After 8 oz. of chocolate barium—given finally with some difficulty through a stomach-tube—radiographic screening showed marked gastric peristalsis but the duodenum was not visualised. A plate, taken prone, suggests an obstruction at the junction of the first and second part of the duodenum (Dr. F. M. Allchin) (Fig. 1).

Treatment.—There was a rise of temperature after the barium meal and with it anorexia and early dehydration. This was treated with rectal glucose in saline [illegible] four stomach large and hypertrophied. The duodenum was traced distally and was also found large and hypertrophied as far as the obstruction by the superior mesenteric vessels. A posterior gastro-jejunostomy was performed, as it was considered inadvisable to attempt to free the vessels and adhesions. Recovery was uneventful apart from some tonsillitis with cervical adenitis lasting four days. Three weeks after the operation he was discharged home, on a mixed diet, weighing 19 lb. A fortnight later a barium meal at out-patients showed that though there was still considerable distension of the first part of the duodenum the obstruction was much relieved (Fig. 2). He then weighed 20½ lb. and had not vomited while at home. A further radiogram was taken a month later and showed that the food passes readily into the small intestine. He weighed 23½ lb.

1 2

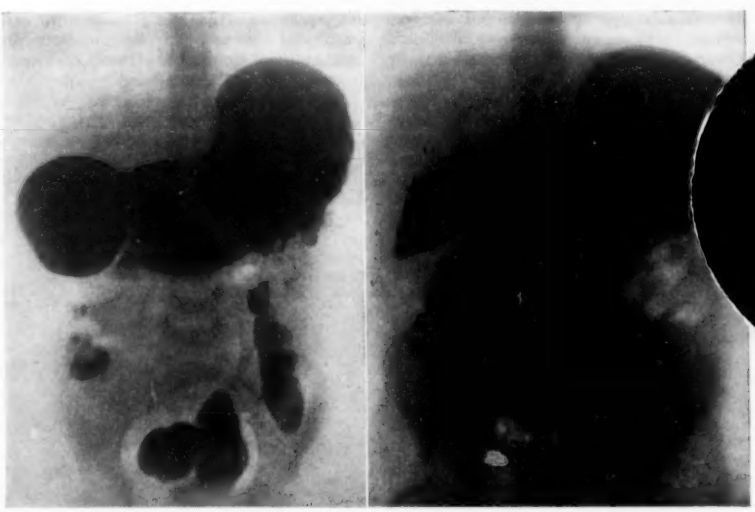

FIG. 1.—Taken half an hour after the barium was given, showing the enlarged duodenum. (Barium in rectum due to a previous enema.)

FIG. 2.—A fortnight later. Barium passing freely into the small intestine.

Miller and Gage suggest that the best way of treating these cases is first by alkaline gastric lavage to remove the mucus. The mucus is the result of chronic gastritis set up by stagnation and is partially responsible for the anorexia and vomiting. To remove the mucus is admirable therapy, but to do so with alkali in a patient who, because of persistent vomiting, may be on the verge of alkalosis, seems irrational. In the present case saline was used and was found effective.

Miller and Gage also treat their cases successfully with dry feeds and with fluid only between meals.

MR. ELLINGER AND OTHERS

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This treatment was not tried in this case for reasons of time, the mother being anxious to take her child back to South Africa. The advisability of this treatment is, however, mooted by the reports of Wilkie (1927) and of Rowlands (1930), who find that a number of their adult patients with chronic duodenal obstruction have had similar attacks dating back to early childhood, which were regarded as constitutional or as evidence of recurring acidosis. These attacks, though followed by apparent recovery, came on again in adult life, and one wonders whether these cases will improve, for a time at least, in spite of any medicinal treatment.

While admitting that gastro-jejunostomy is better performed in adult life, the alternative is that these people must live with the possibility of obstruction hanging, like the sword of Damocles, over their head.

I have to thank Dr. Donald Paterson, under whose care this patient was, for permission to publish.

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pH OF HUMAN BLOOD PLASMA SPIRATORY AND CARDIAC DISEASE

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IT has been suggested that alterations in the hæmo-respiratory exchange may in certain circumstances affect the growth of the tubercle bacillus in the tissues. The present investigation was undertaken to ascertain whether the *p*H of the blood differs in various forms of respiratory and cardiac disease, some of them rarely, and some often, associated with tuberculosis.

Various workers have described changes in the hydrogen-ion concentration of the blood :—

Koehler (1923) found an elevation of *p*H in cases of influenza and influenzal broncho-pneumonia with temperatures above 103° F. Kast, Myers, and Schmitz (1924) report similar findings in febrile patients. Hastings, Neill, Morgan, and Binger (1924), and Binger, Hastings, and Sendroy (1927) found the *p*H in pneumonia to be normal or nearly normal. Sasano (1935) stated that the *p*H values of strict bed cases of tuberculosis were higher than those of normal controls. Wiese (1936) however, in a study of the hydrogen-ion concentration of the blood in pulmonary tuberculosis, noted no extreme variations from the normal. Woodward and her colleagues (1931) found that the average *p*H in cancer cases was considerably higher than in normal cases and they go so far as to say that "the degree of alkalinity is closely related to the prognosis of the disease." Dautrebande (1925) observed that in cases of cardiac decompensation the *p*H values of venous blood were lower than normal.

The findings of different workers have not always agreed, and Peters and Van Slyke (1932) remarked in connexion with the work on pyrexial cases that more data are required.

In the present investigation 160 blood samples from 150 cases of respiratory and cardiac disease were examined for their *p*H values. Almost always the samples were primarily collected for other hæmatological examinations such as the Wassermann test, sugar or urea estimations, or bacteriological culture. Thus the cases represent a varied collection, including all forms of cardiac disease—rheumatic, syphilitic, hypertensive, and degenerative. In the respiratory group are cases of pneumonitis, tuberculosis, bronchiectasis, asbestosis, catarrhal conditions, and neoplastic disease. Six samples were obtained from out-patients, but all the others from in-patients of the London Chest Hospital.

All the specimens were collected between the hours of eleven and twelve in the forenoon, shortly before the mid-day meal, so as to exclude changes that might be ascribed to meals. In addition to the 160 samples from pathological cases, 16 samples were also examined from 12 healthy persons to serve as controls. These were taken from members of the medical staff and porters of the hospital, while 2 samples came from patients' relatives—would-be donors for a blood transfusion. The blood was drawn from a vein of the forearm into an oiled syringe and transferred under oil into the special centrifuge tube of Myers and Muntwyler—described by Peters and Van Slyke (1932)—coated with enough potassium oxalate to give a concentration of 3 mg. oxalate per cubic centimetre of blood.

In a previous paper (Shiskin 1936) a full description was given of the technique and the colorimetric method employed.

The results are set out in Tables I–III.

TABLE I—*Normal Controls*

No.	Sex.	Age.	*p*H.	No.	Sex.	Age.	*p*H.
1	M.	50+	7·39 7·42 7·43 7·41 7·39	6	F.	51	7·39
				7	F.	52	7·43
				8	M.	30	7·40
2	F.	40	7·39	9	M.	30+	7·39
3	M.	19	7·41	10	M.	29	7·39
4	M.	28	7·40	11	M.	28	7·40
5	M.	59	7·41	12	M.	50+	7·39

The five readings for Subject 1 were obtained on the following dates: Nov. 27th, Nov. 30th, Dec. 14th, Dec. 21st, and Feb. 23rd.

DISCUSSION

In the 12 control subjects examined the *p*H varied from 7·39 to 7·43, with an average of 7·40.

Sasano's (1935) figures for normal controls are 7·35 to 7·41, with an average of 7·384. Ely (1933) found variations from 7·35 to 7·39, with an average of 7·37; Wiese (1936) in 5 normal cases a range of 7·35 to 7·375, with an average of 7·37; and Harris, Jones, and Aldred (1935) in 4 cases a range of 7·41 to 7·46, with an average of 7·443. Shock and Hastings (1934) give the following figures: 7·34 to 7·45, with an average of 7·399, for men; and 7·38 to 7·45, with an average of 7·415, for women. Emerson and Helmer (1935) from a study of 16 normal subjects found the *p*H to vary from 7·34 to 7·39, with an average of 7·37. Crimm and Watson (1933) reported an average *p*H of 7·37, with a range of 7·35 to 7·40, for 50 normal persons, while Woodward and her co-workers (1931) obtained an average value of 7·38 in 25 normal cases. My figures appear to be similar to those obtained by Shock and Hastings (1934).

In the 160 pathological samples examined a much wider range is observed—from 7·31 to 7·58 as against 7·39 to 7·43 in the normal cases. As is seen from the accompanying Figure, most of the values lie between 7·40 to 7·44.

There was no characteristic *p*H for any particular disease. The average for pulmonary tuberculosis was almost identical with the average for neoplasm, while the average for chronic pulmonary suppuration differed little from that for renal disease. In cases of mitral stenosis and aortic disease, the average *p*H of those with cyanosis was lower than that of the cases without cyanosis. This difference between cyanotic

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Physical examination.—Small child weighing 17 lb.; psychologically negativist. Dark skin (is of South African and Jewish parentage) and not pale; no evidence of rickets; no dehydration. Inspection of the abdomen revealed a grossly dilated stomach whose outline could easily be made out, and which reached well over to the right side. Huge peristaltic waves could be seen running from under the left costal margin to the right side of the abdomen. These began about five minutes after a feed and could easily be felt with the hand. No reverse peristalsis was seen. The vomit was large and projectile. A splash was not elicited and no tumour was felt. The descending colon was palpable and filled with fæces. The remainder of the examination was negative.

Investigations.—Nothing abnormal in the urine. Blood count shows a mild low colour-index anæmia. After 8 oz. of chocolate barium—given finally with some difficulty through a stomach-tube—radiographic screening showed marked gastric peristalsis but the duodenum was not visualised. A plate, taken prone, suggests an obstruction at the junction of the first and second part of the duodenum (Dr. F. M. Allchin) (Fig. 1).

Treatment.—There was a rise of temperature after the barium meal and with it anorexia and early dehydration. This was treated with rectal glucose in saline; the stomach was washed out with saline once daily for four days and the vomiting ceased. It was then decided to operate, and Mr. G. H. Macnab opened the abdomen through a transverse incision and found the stomach large and hypertrophied. The duodenum was traced distally and was also found large and hypertrophied as far as the obstruction by the superior mesenteric vessels. A posterior gastro-jejunostomy was performed, as it was considered inadvisable to attempt to free the vessels and adhesions. Recovery was uneventful apart from some tonsillitis with cervical adenitis lasting four days. Three weeks after the operation he was discharged home, on a mixed diet, weighing 19 lb. A fortnight later a barium meal at out-patients showed that though there was still considerable distension of the first part of the duodenum the obstruction was much relieved (Fig. 2). He then weighed 20¼ lb. and had not vomited while at home. A further radiogram was taken a month later and showed that the food passes readily into the small intestine. He weighed 23½ lb.

1 2

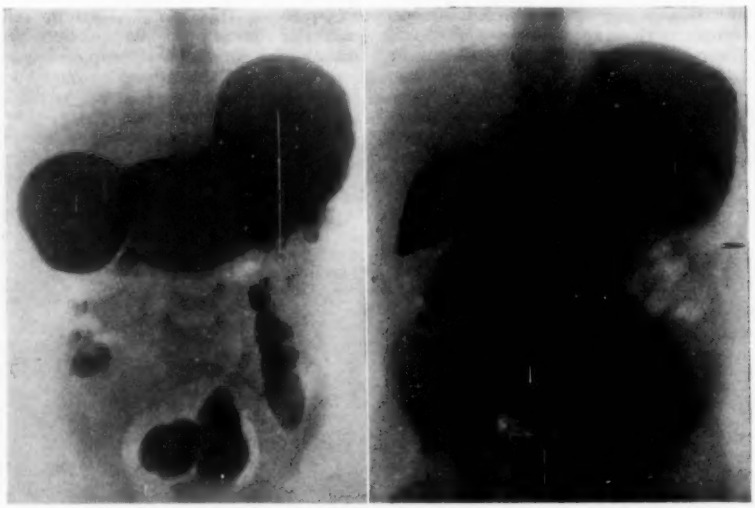

FIG. 1.—Taken half an hour after the barium was given, showing the enlarged duodenum. (Barium in rectum due to a previous enema.)

FIG. 2.—A fortnight later. Barium passing freely into the small intestine.

Miller and Gage suggest that the best way of treating these cases is first by alkaline gastric lavage to remove the mucus. The mucus is the result of chronic gastritis set up by stagnation and is partially responsible for the anorexia and vomiting. To remove the mucus is admirable therapy, but to do so with alkali in a patient who, because of persistent vomiting, may be on the verge of alkalosis, seems irrational. In the present case saline was used and was found effective.

Miller and Gage also treat their cases successfully with dry feeds and with fluid only between meals.

MR. ELLINGER AND OTHERS

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This treatment was not tried in this case for reasons of time, the mother being anxious to take her child back to South Africa. The advisability of this treatment is, however, mooted by the reports of Wilkie (1927) and of Rowlands (1930), who find that a number of their adult patients with chronic duodenal obstruction have had similar attacks dating back to early childhood, which were regarded as constitutional or as evidence of recurring acidosis. These attacks, though followed by apparent recovery, came on again in adult life, and one wonders whether these cases will improve, for a time at least, in spite of any medicinal treatment.

While admitting that gastro-jejunostomy is better performed in adult life, the alternative is that these people must live with the possibility of obstruction hanging, like the sword of Damocles, over their head.

I have to thank Dr. Donald Paterson, under whose care this patient was, for permission to publish.

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THE *p*H OF HUMAN BLOOD PLASMA IN RESPIRATORY AND CARDIAC DISEASE

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IT has been suggested that alterations in the hæmo-respiratory exchange may in certain circumstances affect the growth of the tubercle bacillus in the tissues. The present investigation was undertaken to ascertain whether the *p*H of the blood differs in various forms of respiratory and cardiac disease, some of them rarely, and some often, associated with tuberculosis.

Various workers have described changes in the hydrogen-ion concentration of the blood:—

Koehler (1923) found an elevation of *p*H in cases of influenza and influenzal broncho-pneumonia with temperatures above 103° F. Kast, Myers, and Schmitz (1924) report similar findings in febrile patients. Hastings, Neill, Morgan, and Binger (1924), and Binger, Hastings, and Sendroy (1927) found the *p*H in pneumonia to be normal or nearly normal. Sasano (1935) stated that the *p*H values of strict bed cases of tuberculosis were higher than those of normal controls. Wiese (1936) however, in a study of the hydrogen-ion concentration of the blood in pulmonary tuberculosis, noted no extreme variations from the normal. Woodward and her colleagues (1931) found that the average *p*H in cancer cases was considerably higher than in normal cases and they go so far as to say that "the degree of alkalinity is closely related to the prognosis of the disease." Dautrebande (1925) observed that in cases of cardiac decompensation the *p*H values of venous blood were lower than normal.

The findings of different workers have not always agreed, and Peters and Van Slyke (1932) remarked in connexion with the work on pyrexial cases that more data are required.

In the present investigation 160 blood samples from 150 cases of respiratory and cardiac disease were examined for their *p*H values. Almost always the samples were primarily collected for other hæmatological examinations such as the Wassermann test, sugar or urea estimations, or bacteriological culture. Thus the cases represent a varied collection, including all forms of cardiac disease—rheumatic, syphilitic, hypertensive, and degenerative. In the respiratory group are cases of pneumonitis, tuberculosis, bronchiectasis, asbestosis, catarrhal conditions, and neoplastic disease. Six samples were obtained from out-patients, but all the others from in-patients of the London Chest Hospital.

All the specimens were collected between the hours of eleven and twelve in the forenoon, shortly before the mid-day meal, so as to exclude changes that might be ascribed to meals. In addition to the 160 samples from pathological cases, 16 samples were also examined from 12 healthy persons to serve as controls. These were taken from members of the medical staff and porters of the hospital, while 2 samples came from patients' relatives—would-be donors for a blood transfusion. The blood was drawn from a vein of the forearm into an oiled syringe and transferred under oil into the special centrifuge tube of Myers and Muntwyler—described by Peters and Van Slyke (1932)—coated with enough potassium oxalate to give a concentration of 3 mg. oxalate per cubic centimetre of blood.

In a previous paper (Shiskin 1936) a full description was given of the technique and the colorimetric method employed.

The results are set out in Tables I–III.

TABLE I—*Normal Controls*

No.	Sex.	Age.	*p*H.	No.	Sex.	Age.	*p*H.
1	M.	50+	7·39 7·42 7·43 7·41 7·39	6	F.	51	7·39
				7	F.	52	7·43
				8	M.	30	7·40
2	F.	40	7·39	9	M.	30+	7·39
3	M.	19	7·41	10	M.	29	7·39
4	M.	28	7·40	11	M.	28	7·40
5	M.	59	7·41	12	M.	50+	7·39

The five readings for Subject 1 were obtained on the following dates: Nov. 27th, Nov. 30th, Dec. 14th, Dec. 21st, and Feb. 23rd.

DISCUSSION

In the 12 control subjects examined the *p*H varied from 7·39 to 7·43, with an average of 7·40.

Sasano's (1935) figures for normal controls are 7·35 to 7·41, with an average of 7·384. Ely (1933) found variations from 7·35 to 7·39, with an average of 7·37; Wiese (1936) in 5 normal cases a range of 7·35 to 7·375, with an average of 7·37; and Harris, Jones, and Aldred (1935) in 4 cases a range of 7·41 to 7·46, with an average of 7·443. Shock and Hastings (1934) give the following figures: 7·34 to 7·45, with an average of 7·399, for men; and 7·38 to 7·45, with an average of 7·415, for women. Emerson and Helmer (1935) from a study of 16 normal subjects found the *p*H to vary from 7·34 to 7·39, with an average of 7·37. Crimm and Watson (1933) reported an average *p*H of 7·37, with a range of 7·35 to 7·40, for 50 normal persons, while Woodward and her co-workers (1931) obtained an average value of 7·38 in 25 normal cases. My figures appear to be similar to those obtained by Shock and Hastings (1934).

In the 160 pathological samples examined a much wider range is observed—from 7·31 to 7·58 as against 7·39 to 7·43 in the normal cases. As is seen from the accompanying Figure, most of the values lie between 7·40 to 7·44.

There was no characteristic *p*H for any particular disease. The average for pulmonary tuberculosis was almost identical with the average for neoplasm, while the average for chronic pulmonary suppuration differed little from that for renal disease. In cases of mitral stenosis and aortic disease, the average *p*H of those with cyanosis was lower than that of the cases without cyanosis. This difference between cyanotic

TABLE II

Cases with pH Values in Various Diseases

—	Under 7·35	7·35–	7·37–	7·39–	7·41–	7·43–	7·45–	7·47 and over.	Totals. Samples.	Totals. Patients.	Mean pH value.
Chronic pulmonary suppuration—e.g., bronchiectasis and abscess	0	0	0	3	2	3	1	2	11	11	7·432
Renal disease with pulmonary or cardiovascular complications	0	1	0	1	0	2	1	1	6	5	7·430
Mitral disease without cyanosis	0	0	0	1	3	2	1	0	7	7	7·426
Mitral disease with cyanosis	1	2	1	2	3	0	1	1	11	10	7·395
Neoplasms	0	0	2	6	5	7	3	1	24	21	7·423
Pulmonary tuberculosis	0	0	2	7	6	7	4	2	28	26	7·422
Aortic disease without cyanosis	0	0	1	2	5	2	2	0	12	10	7·414
Aortic disease with cyanosis	0	0	1	2	0	0	0	0	3	3	7·390
Cardiovascular degeneration without cyanosis	0	3	1	4	3	4	2	2	19	19	7·413
Cardiovascular degeneration with cyanosis	0	1	2	2	2	2	0	1	10	9	7·411
Pulmonary disease of indeterminate causation (bronchitis, fibrosis, &c.)	0	1	2	5	10	2	1	1	22	22	7·410
Miscellaneous diseases with respiratory or cardiovascular complications (pulmonary asbestosis, &c.)	0	0	0	4	2	6	0	0	12	10	7·418
									165	153	

N.B.—Three patients (5 samples) were included in two disease groups, hence the total appears here as 165 samples and 153 patients, instead of 160 and 150.

and non-cyanotic patients was not observed in the cases of cardiovascular degeneration.

Increased pulmonary ventilation appeared to increase the alkalinity of the blood, as also did pyrexia. The *p*H did not vary with sex, or age, or an increase or decrease in the pulse-rate. One normal control and a few of the patients were examined more than once, and it is noteworthy that there was very little variation in the figures obtained, even when the interval between examinations was as long as nine months.

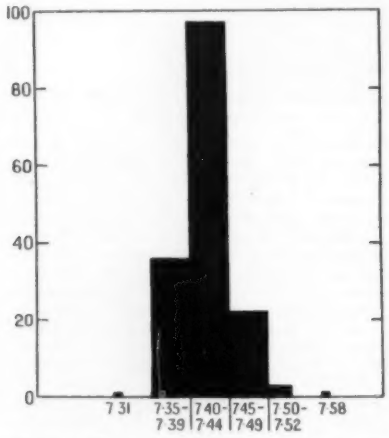

Chart showing *p*H values obtained in 160 observations on 150 patients with respiratory or cardiac disease.

On the whole the present findings accord with those of other workers. While Sasano (1935) found that the *p*H values of strict bed cases of tuberculosis were higher than those of normal controls, Wiese (1936) reported no great variations from the normal. In the present work the average *p*H in the cases of pulmonary tuberculosis (7·422), though higher than in the normal controls, is almost identical with the average *p*H (7·423) in the neoplastic group and lower than the figure for pulmonary suppuration (7·432). The increase in alkalinity observed in the pyrexial cases—7·433 as against 7·417 in the apyrexial series—has likewise been recorded by Koehler (1923) and Kast, Myers, and Schmitz (1924). It is not a pronounced difference. Hastings and his co-workers (1924 and 1927), who determined the *p*H electrometrically, found it normal or nearly normal in pneumonia, where of course the temperature was considerably raised.

TABLE III

Relation of pH to Age, Pulse-rate, Temperature, Respiration-rate, and Sex

—	Under 7·35	7·35–	7·37–	7·39–	7·41–	7·43–	7·45–	7·47 and over.	Totals. Samples.	Totals. Patients.	Mean pH value.
Age in years:											
Under 30	1	1	0	4	10	7	5	4	32	30	7·412
30–49	0	1	6	18	13	13	3	2	56	51	7·413
50–59	0	4	2	11	12	8	3	2	42	41	7·412
60 and over	0	2	5	5	4	7	5	2	30	28	7·417
Pulse-rate:											
82–120	1	6	5	21	20	22	10	9	94	88	7·419
72–80	0	2	5	16	15	10	5	1	54	50	7·411
36–70	0	0	1	2	4	4	1	0	12	12	7·415
Temp.:											
98·6°–102° F.	0	2	1	6	5	7	5	6	32	30	7·433
Normal	1	6	11	32	34	29	11	4	128	120	7·412
Resp.-rate:											
Up to 20	1	4	7	27	20	20	4	4	87	85	7·410
22–48	0	4	5	12	19	14	13	6	73	65	7·423
Sex:											
Females	1	2	2	13	16	11	4	4	53	48	7·416
Males	0	6	10	26	23	24	12	6	107	102	7·417

CONCLUSIONS

1. The *p*H of 12 healthy controls was found to vary from 7·39 to 7·43, with an average of 7·40.

2. The *p*H of 150 patients varied from 7·31 to 7·58, with an average of 7·416. These *p*H values have a much wider range than the normals but the numbers investigated are not comparable.

3. Little variation was noted in the few cases where repeated *p*H estimations were made.

4. In mitral and aortic disease an increased acidity was found in the cyanotic group as compared with the non-cyanotic group. This difference was not observed in the cases of cardiovascular degeneration.

5. The average *p*H values in pulmonary tuberculosis were somewhat higher than in healthy controls, but were lower than those of chronic pulmonary suppuration.

6. In cases of pyrexia, irrespective of cause, there was a tendency towards alkalinity.

7. While in a few cases wide variations in the *p*H value of the blood were observed it appears that, unless there is gross interference with the hæmo-respiratory exchanges, the normal buffers of the blood are adequate to deal with changes in the acid-base equilibrium. The increase of acidity in mitral disease associated with cyanosis—a condition usually regarded as inimical to tuberculosis—is of possible significance.

I am greatly indebted to Dr. S. Roodhouse Gloyne for assistance and advice.

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SEROLOGICAL GROUPING AND TYPING OF HÆMOLYTIC STREPTOCOCCI

FROM VARIOUS HUMAN SOURCES

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THIS is a short contribution to the general problem of determining the types of hæmolytic streptococci found in human streptococcal infections, especially puerperal fever, and in the nose and throat of normal persons. It is realised that prevalent types may vary from place to place and at different times and that a complete picture will eventually be obtained by compiling numerous observations by different workers. During this work the assistance of Dr. F. Griffith of the Ministry of Health and those working at Queen Charlotte's Maternity Hospital, London, was made available, so that the results reported here may be considered in relation to the much larger number of strains they have studied.

STRAINS STUDIED

Congdon (1935) from this laboratory reported upon the grouping of 107 strains from cases of puerperal fever, septic abortion, and the nose and throat of patients or contacts. I have typed some of these and in addition 88 freshly isolated strains have been examined. Swabs were plated on horse-blood agar plates and incubated aerobically at 37° C. for 18 to 24 hours. Soluble hæmolysin tests have not been performed unless there was some doubt about the strain isolated.

GROUPING

The strains were allotted to their particular group as a preliminary to typing.

Preparation of group extracts.—The method used was that of Plummer (1935), but smaller volumes were employed. A tube of 20 per cent. serum trypsin broth was inoculated with a sweep of colonies from a blood-agar plate and incubated for 18 hours. The deposit after centrifuging was heated with 1 c.cm. of N/20 hydrochloric acid in a water-bath at 100° C. for 10 minutes, cooled and centrifuged. The supernatant fluid was pipetted off and neutralised with N/1 caustic soda, using brom-thymol-blue as an indicator (*p*H 6–7·6). The volume of extract obtained was sufficient to group a strain by the capillary pipette method.

Preparation of group sera.—Sera for Groups A, B, C, D, F, and G have been prepared with cultures sent by Dr. Hare from Queen Charlotte's Maternity Hospital. The method of preparation was that of Lancefield and Hare (1935) and their technique for the capillary pipette precipitin test has also been followed.

Results.—Throughout this work only one strain from each case has been recorded, as it was found that organisms isolated from blood, cervix, or vagina were always similar in group and type.

For convenience the strains may be divided into the following sections:—

(*a*) 25 strains isolated from the blood, cervix, or vagina of definite purperal fever cases; of these 1 strain belonged to Group C (Griffith's Type 7) and 24 (96·0 per cent.) to Group A.

(*b*) 34 strains isolated from definite streptococcal infections (scarlet fever, erysipelas, mastoid, and septic foci). 2 of these strains belonged to Group G, 1 remained ungrouped, and the remaining 31 (91·2 per cent.) were Group A strains.

(*c*) 29 strains from nose or throat of normal individuals, throat washings of influenza cases, and nose, throat, or gums of puerperal fever cases, but not necessarily of patients with streptococcal infections. 9 (31·0 per cent.) strains belonged to Group A, 1 to Group B, 1 to Group G, and 18 (62·1 per cent.) remained unclassified. None of the unclassified strains formed soluble hæmolysin.

TYPING

Strains have been typed by slide-agglutination as described by Griffith (1934), who most generously supplied the set of type-specific sera used for these tests. All Griffith's types were represented and all were prepared from Group A strains, with the exception of Types 7, 20, and 21, which are Group C, and Type 16, which is Group G.

Strains have always been tested as soon as possible after isolation.

Results.—A total of 159 Group A strains have been examined; of these, 3 were too granular to form suitable suspensions for testing and 5 gave doubtful reactions. In all, 86 (54·1 per cent.) have been typed by slide-agglutination; the remainder did not agglutinate with any of the type sera.

The incidence of the types in relation to source is given in the accompanying Table, and further particulars are noted below.

(*a*) 79 strains from puerperal fever cases; of these 2 were too granular to form usable suspensions and 2 gave doubtful reactions; 44 (55·7 per cent.) have been typed, and 31 (39·2 per cent.) remained untyped.

(*b*) 8 strains from cases of septic abortion and 2 (25·0 per cent.) of these have been typed.

(*c*) 31 strains from miscellaneous streptococcal infections and 20 (64·5 per cent.) of these agglutinated with type sera and 11 (35·5 per cent.) remained untyped.

(*d*) 41 strains isolated from nose and/or throat of puerperal fever cases and their contacts and normal individuals; of these 1 was too granular to type and 3 gave doubtful reactions. 20 (48·8 per cent.) have been typed and 17 (41·5 per cent.) failed to agglutinate.

Griffith Types found by Slide-agglutination Tests

Source.	No. of times represented.	Type.
(*a*) Strains isolated from puerperal fever cases.	5	6
	4	2
	4	4
	4	25
	3	5
	3	8
	3	9
	3	13
	3	22
	3	28
	2	27
	1	1
	1	3
	1	10
	1	11
	1	12
	1	14
	1	15
(*b*) Strains isolated from cases of septic abortion.	1	22
	1	25
(*c*) Strains isolated from miscellaneous streptococcal infections.	8	2
	3	8
	2	22
	2	27
	1	4
	1	10
	1	12
	1	13
	1	25
(*d*) Strains isolated from nose and/or throat of normal individuals, puerperal fever patients, and their contacts.	5	22
	4	4
	3	13
	2	1
	1	5
	1	8
	1	9
	1	11
	1	12
	1	14

DISCUSSION

These results agree with what is now generally accepted, that human streptococcal infections are caused by Group A strains. The percentage of puerperal fever strains which agglutinated with Griffith's type sera is definitely lower than that obtained by Dora Colebrook (1935), who typed 70·2 per cent. of 121 strains tested by this method. This lower percentage may perhaps have been due to the fact that some of the strains isolated by Congdon (1935) had lost their type-specificity, as they had been subcultured for two or three years before typing. The percentage of freshly isolated strains that agglutinated (66·7) was higher than the percentage (54·5) of older strains.

The incidence of types in puerperal fever is somewhat different from that found by Colebrook (1935), although Types 2 and 25 are among the most frequent in both collections. It seems probable, therefore, that this incidence is influenced by the distribution of types among the general population, and that when these strains were collected this distribution in the Manchester district was not the same as in the London area, where Colebrook's investigation was made.

Type 2 is also apparently a common cause of other streptococcal infections, but is not represented among the nose or throat strains that have been typed.

I am indebted to Dr. Veitch Clark, medical officer of health for Manchester, and the maternity and child welfare committee of the public health department of Manchester for an annual grant for this work, and also to the Ministry of Health for a grant towards expenses.

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Clinical and Laboratory Notes

SUBARACHNOID HÆMORRHAGE SIMULATING "ACUTE ABDOMEN"

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SPONTANEOUS subarachnoid hæmorrhage presenting a clinical picture suggestive of an acute abdominal catastrophe has, so far as I can ascertain, never been described.

A married woman, aged 31, was delivered naturally of a microcephalic child, which survived nine days, in November, 1936. After this confinement she began to have migrainous headaches, recurring about once a week. The headaches were severe, especially in the eye and frontal region; they were unaccompanied by vomiting or teichopsia. There was no clear predisposing cause for the headaches, but they were worse at the time of her periods. At the same time she began to have backache and occasional frequency of micturition.

In 1930 she had had an illness characterised by drowsiness and headache. She was in bed for a week, and the attack culminated in a profuse epistaxis, which gave her relief. She had had no other notable ill health and has a healthy child aged 3.

On Sept. 26th, 1937, she noticed a "stitch-like" pain in her left side. There was no headache, vomiting, or bowel disturbance. During the next two days the pain varied in severity, and she carried out her usual household duties. On the 28th I saw her with regard to the abdominal pain. Pulse-rate, 80; temperature, 98·4° F.; tongue clean. She was vague in localising the pain but it seemed worst in the left side of the abdomen. Respiratory excursion was full and easy. On palpation, there was hyperæsthesia of the whole abdominal surface, but no rigidity or deep tenderness. Other systems normal. The urine contained no albumin or sugar; a few pus cells were seen in the centrifugalised deposit.

On Sept. 29th, at midday, she was seized by a sharp abdominal pain whilst shopping. This eased during the afternoon, but at 8 P.M. it became worse and she fainted and vomited. At this time she was pale and sweating. Pulse-rate, 104; temperature, 98° F.; tongue dry, with a yellow central fur. The abdominal soreness was such that she cried out while being examined, but there was still no rigidity or deep tenderness. Her mental state was peculiar, inasmuch as she averred, while writhing in pain, that she felt quite well, which was the more surprising since her usual attitude is most intelligent and coöperative. During the next two hours the pulse-rate rose steadily to 120, and it appeared that she had an acute abdominal condition, possibly a perforated viscus. At 10 P.M. she was seen with Mr. R. H. O. B. Robinson, who advised against abdominal section.

At 10.30 P.M. she complained that the light hurt her eyes and that she had a headache. She was, by now, decidedly drowsy. Examination showed slight neck stiffness and an extensor plantar and positive Kernig on the right side. The eyes and discs were not properly inspected because of her photophobia, but the pupils were equal and reacted to light, and I could elicit no evidence of ocular paresis or double vision. Blood pressure 128/80. I now suspected subarachnoid hæmorrhage. Lumbar puncture disclosed blood-stained cerebro-spinal fluid, and the procedure gave her much relief.

On Sept. 30th she felt better. The abdominal pain had gone and there was no hyperæsthesia, but drowsiness, headache, and photophobia persisted. On Nov. 1st she was seen with Dr. A. H. Douthwaite, who agreed with a diagnosis of spontaneous subarachnoid hæmorrhage from a congenital aneurysm of the circle of Willis. A second lumbar puncture yielded a clear fluid which contained red cells, protein 0·04 per cent., and negative Wassermann,

Kahn, and Lange reactions. She was kept in bed for three weeks and her condition steadily improved.

I suggest that the abdominal pain was due to irritation of the lower dorsal nerve-roots by the deposit of fibrin. This part of the spine is at a low level in recumbency, and blood from a small leak would tend to accumulate here while the patient lay in bed. The absence of body movement would facilitate this at night, while during the daytime there would be less likelihood of fibrinous deposit occurring at any special part of the central nervous system. Collier (1934) explains in this way the lumbago-sciatica syndrome described by Sir Arthur Hall (1932). Hall mentions the occurrence of subarachnoid hæmorrhage of intraspinal origin, and this must be considered in connexion with the above case. Intraspinal hæmorrhage begins with severe backache and shows neck stiffness and headache as later developments. Taking into account the previous attack in 1930 and the recurring headaches, the origin of my patient's hæmorrhage seems more likely to have been an aneurysm of the circle of Willis.

I am indebted to Dr. Douthwaite and Mr. Robinson for their help.

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A CASE OF OTITIC MENINGITIS

By A. Bowen-Davies, M.B. Camb., F.R.C.S. Eng.

CHIEF CLINICAL ASSISTANT AND REGISTRAR IN THE EAR, NOSE AND THROAT DEPARTMENT, GUY'S HOSPITAL, LONDON

The following case of otitic meningitis treated by conservative mastoidectomy and continuous lumbar puncture drainage may be of interest.

The patient, a girl of 10, was admitted to Guy's Hospital on Feb. 23rd, 1937, complaining of discharge from the right ear with general malaise. For the previous ten days she had had a discharge from the right ear. There had never been pain in the ear but during the first week of the illness there had been severe frontal headache. There was no history of previous ear disease.

On admission the temperature was 104° F., the pulse-rate 128, and the respiration-rate 22 per minute. The child was toxic and irritable although she complained of no pain. The tongue was furred and there was fœtor oris. A copious thin discharge was coming from the right ear but there was no swelling or tenderness over the mastoid process. There was nystagmus on looking to the right and some rigidity of the neck muscles. Kernig's sign was absent, the mentality was clear, and in every other respect the central nervous system was normal. A lumbar puncture was performed immediately, and the findings were :—

Pressure of cerebro-spinal fluid : 240 mm. water.
Macroscopic appearance of fluid : opalescent.
Microscopic examination :

Cells : Polymorphonuclears ..	110	per c.mm.
Lymphocytes	90	"
Mononuclears	35	"
Red corpuscles	50	"

No organisms seen.
Pandy : positive.

A diagnosis of acute mastoiditis with meningitis was made and a conservative mastoidectomy was performed. There were many cells filled with granulations but little pus was found. The dura mater of the middle and posterior fossæ appeared healthy. Over the lower part of the lateral sinus, however, granulations were seen over an area about the size of a threepenny piece. Healthy tissue was exposed all round this area.

Next day a lumbar puncture was performed and continuous lumbar puncture drainage was started. In the evening the temperature rose to 105° F. and the pulse-rate was 120. Lateral sinus thrombosis was suspected but no confirmatory evidence was obtained, and by the following day the temperature had fallen to 103°. The report on the fluid was :—

Macroscopic appearance : slightly turbid.
Pandy : positive.
Protein : 0·07 per cent.
Microscopic appearance :
Cells 600 per c.mm., of which 70 per cent. are polymorphonuclears.
An occasional Gram-positive coccus.
Cultures : hæmolytic streptococcus and *Staphylococcus albus*.

Prontosil soluble (2½ per cent.) was administered in doses of 10 c.cm. intramuscularly, with Prontosil album 2·0 grammes (in three doses) by mouth, daily for six days. There was a gradual fall in the temperature and the general condition improved. The continuous lumbar puncture was draining freely, six ounces of fluid having been removed during the first twenty-four hours. The improvement was maintained until Feb. 27th, four days after admission. Twenty-one ounces of fluid had drained from the lumbar puncture but the needle had now become blocked and was therefore removed. It was not reinserted but by the evening the patient was not so comfortable. A lumbar puncture was performed and three ounces of fluid were removed. The continuous drainage was resumed the next day and the condition of the patient improved until March 6th when she became drowsy and the temperature rose. The continuous drainage was working more slowly, only nine and a half ounces of fluid having been removed during the previous nine days. On March 9th the patient had a leucocytosis of 14,000 white cells and as she appeared to be losing ground a blood transfusion was given on March 11th. The patient belonged to Group 2, and five ounces of blood were given. After this she made a rapid improvement and she was discharged on April 27th with the ear dry and the mastoid wound healed.

During the first two days after the operation the patient did not take fluid well but after the third day she was taking 120 oz. during the twenty-four hours. Her mental condition was good although at first she was inclined to be delirious at night. She appeared comfortable, and although the needle in her back necessitated her movements being somewhat restricted she required no restraining.

The favourable progress of the case after the administration of prontosil seems to have been somewhat misleading, since the removal of the needle caused a rise in temperature and a deterioration of the general condition. The needle used for the continuous lumbar puncture drainage has a bayonet attachment for a rubber tube leading to a manometer, by means of which the pressure can be maintained at any level. A flange is provided which prevents movement taking place. This type of needle was designed by Dr. A. C. Hampson and was introduced to us by him.

I am indebted to Mr. W. M. Mollison for permission to publish this case.

Elizabeth Garrett Anderson Hospital.—The foundation-stone of the new nurses' home at this hospital has been laid by the Duchess of Kent, who is its president. The estimated cost of the home is £60,000, towards which £35,400 has so far been subscribed.

Essex County Hospital, Colchester.—Mr. S. A. Courtauld on Oct. 28th opened new wards at this hospital, each containing 22 beds. This is the first part of the extension scheme which is to cost £40,000, and ophthalmic wards, more X ray and massage accommodation, and a new operating theatre will be added when funds allow. The hospital has been in existence for over a century and now serves a population of 130,000. Last year 86,000 cases were treated there.

MEDICAL SOCIETIES

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION

A MEETING of this association was held on Oct. 25th, with Miss E. C. LEWIS, the president, in the chair.

Prof. J. W. MCNEE spoke on

Rheumatic Fever

He stated that since returning to Glasgow from London he had been impressed with the frequency and severity of the acute rheumatism diseases compared with his clinical experiences in London. He referred particularly to cases of acute rheumatism seen in the early spring of 1937, especially affecting adults and adolescents. He discussed the features and possible ætiological relationship between three different types of case: (1) ordinary acute rheumatic fever; (2) chorea; and (3) an illness starting with the usual phenomena of acute rheumatic fever but running on directly into the typical picture of rheumatoid arthritis. He spoke of the clinical severity of the first type, the striking effects of salicylates on the fever and general symptoms and the great tendency to relapse if heavy dosage of salicylates was relaxed too soon. In the second type he denied that chorea only affected alert and nervous people; the dull and apparently unemotional factory girl seemed quite susceptible. The third type of case was important in relation to the problem of ætiological connexion between acute rheumatism and rheumatoid arthritis. These cases, when affecting adolescents, were not Still's disease—there was never enlargement of lymph glands or spleen. Endocarditis occurred in all three groups; but this was no proof of a direct ætiological connexion between the groups. An exactly similar endocarditis might occur in other and quite different diseases. Prof. McNee said he had seriously begun to wonder if the acute rheumatic diseases, especially rheumatic fever and chorea, represented any true clinical and infective entity—his faith in these things had been shaken by the recent developments in knowledge of scarlet fever. Perhaps the Aschoff body was the sole clue available at present, but was that a lesion caused by a specific virus or merely the reaction round a small area of necrosis due to various infective or toxic agents? Were Aschoff bodies to be found constantly in chorea or in the third type of case referred to? It was difficult to interpret the epidemiological facts about acute rheumatic diseases that were already known. It was usually a seasonal disease in Britain, having its greatest incidence in November, but had been common this year in early spring. Prof. McNee was impressed, as was Thomson in Birmingham, with the frequency of damp houses and of residence near a river—the Clyde. It was difficult to suggest any influence of diet—the disease did not seem to attack specially those in the extremest poverty and squalor but often what had been well described as the "decent poor." None of the hypotheses of ætiology—streptococcal, allergic, or filtrable virus—was at all convincing. Work on all of the three types must be pushed on in the centres where the rheumatic diseases were particularly prevalent, and Glasgow certainly appeared to be in this category.

REVIEWS AND NOTICES OF BOOKS

Antenatal and Postnatal Care

Second edition. By FRANCIS J. BROWNE, M.D. Aberd., D.Sc., F.R.C.S. Edin., F.C.O.G., Professor of Obstetrics and Gynæcology, University of London; Director of the Obstetric Unit and Obstetric Surgeon, University College Hospital, London. London: J. and A. Churchill. 1937. Pp. 588. 18s.

DURING the last two years this work has grown considerably. There are now a hundred additional pages, some containing new matter, and the remainder being used for the amplification of various sections. Dr. J. S. Fairbairn has contributed a valuable chapter on the constructive, educational, and social aspects of antenatal care, which serves to connect the various aspects of antenatal care that are discussed in the first hundred and twenty pages of the book, and might well be transposed in the next edition to follow the chapter by Dr. Grantley Dick Read on the influence of the emotions upon pregnancy. Another excellent contribution is a well-illustrated one on the uses and value of radiology in obstetrics by Dr. R. W. A. Salmond which cannot fail to help students and practitioners. Prof. Browne has himself rewritten twenty pages devoted to the diet of the pregnant woman, a subject of acknowledged importance which is seldom clearly explained in text-books. Postnatal care and supervision is considered in greater detail. Attention is directed to the importance of using a speculum in examining the cervix, and of treating cervicitis following childbirth at an early stage.

This edition should attract many new readers; and if they follow conscientiously the sound advice set forth they will do their part in expediting the time when obstetric text-books will no longer have to devote much of their valuable space to rare and disastrous complications of pregnancy, labour, and the puerperium.

Textbook of Midwifery

Ninth edition. By R. W. JOHNSTONE, C.B.E., M.D., F.R.C.S.E., M.R.C.P.E., F.C.O.G., F.R.S.E., Professor of Midwifery and Diseases of Women in the University of Edinburgh London: A. and C. Black. 1937. Pp. 483. 18s.

LITTLE more than twelve months have elapsed since we reviewed the eighth edition of this excellent book. The main features of the work are unaltered, but there are several small but important changes. The physiological changes that occur in the uterus and endometrium both in the pregnant and non-pregnant state are now most clearly described and illustrated. The section on antenatal supervision has been enlarged and contains a detailed account of the aims and objects of this branch of the work as well as hints on how examinations and investigations should be conducted. The possibility that regular observations of the weight of a pregnant woman may give early warning of a toxæmic state is emphasised, and the use of sulphonamide in the treatment of streptococcal infections in the puerperium is noted.

With these exceptions the book remains unchanged. The teaching is eminently sound in spite of the fact that Prof. Johnstone has adopted an attitude more dogmatic than is usual in obstetric text-books to-day.

Chronic Miliary Tuberculosis

By CLIFFORD HOYLE, M.D., M.R.C.P., Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; and MICHAEL VAIZEY, M.B., M.R.C.P., Medical First Assistant and Registrar, London Hospital. London: Humphrey Milford, Oxford University Press. 1937. Pp. 140. 12*s.* 6*d.*

To anyone who regards miliary tuberculosis of the lungs as an acute and inevitably fatal disease this book will come as a surprise. Within the compass of 130 pages the authors have given a clear exposition of a clinical rarity that has been known for over a century, basing their description of it upon 10 cases that they have themselves observed and a further 110 cases selected from the literature. A distinction is drawn between chronic hæmatogenous tuberculosis and the much less common lymphogenous variety that spreads along the pulmonary lymphatics. These two types resemble each other closely at onset but display differences which can be detected as the disease advances. The differential diagnosis is discussed at length; it would seem, however, that tuberculous broncho-pneumonia, secondary carcinomatosis, and pneumoconiosis cause the most confusion. As regards the clinical course prognosis must be guarded until at least two years has elapsed since the disappearance of the last symptom. The patient has about 1 chance in 4 of survival. The book closes with an appendix containing a short summary of each of the 110 cases chosen from the literature and a complete bibliography.

Die biologische Bedeutung der infraroten Strahlen

By O. MERKELBACH, Medizinische Universitaets-Poliklinik. Basel: Benno Schwabe and Co. 1937. Pp. 64. Sw. fr. 4.

ALL forms of ray therapy have started with the empirical and often irresponsible application of the new agency. No exception can be taken to this traditional procedure, for it has proved fruitful in the history of medicine. It means in this instance however that the physicist is needed at first only in his technical capacity as a designer of apparatus; the assessment of therapeutic effects must remain in the hands of the doctor. A misguided desire to explain the way in which these effects are produced frequently leads to experimental work of a low order and to the publication of claims which in the light of physical knowledge seem to be ill-founded but cannot, unhappily, be dismissed out of hand. A stage is inevitably reached at which controlled physical investigation becomes essential, and the physicist who undertakes the task is confronted with a mass of assertions which he has to re-examine—assertions which carry implications of the highest importance but which may well turn out to be untrue.

He can, however, approach the subject by another route; he can examine in the simplest possible systems the properties which he considers relevant to the action of the physical agency under consideration, and build up a body of information which will ultimately enable him to judge, with good authority, the kind of biological action which might be expected, and perhaps to exclude with certainty other modes of action. Dr. Merkelbach, in a monograph on the biological significance of infra-red waves, has made a noteworthy contribution to the study of the therapeutic effects of infra-red radiation from this strictly physical standpoint. As far as the various empirical observations on biological systems are concerned, he is content to review the alleged effects, and to comment upon some of the inconsistencies, attributing them largely to the neglect of physically defined experimental procedures. After a brief survey of the absorption of infra-red radiation by skin and by the reptilian integument, he describes in some detail his own experimental data on the infra-red absorption spectra of various organic and biological substances. Such measurements are fundamental, for biological effects can only be produced if the incident radiation is capable of causing photochemical change, and it can only do this after having been absorbed. The measurements deal in part with a series of simple substances, particularly those, like water, benzene, chloroform, alcohol, pyridine, and dioxane, which are used as solvents, and in part with solutions of substances of biological interest, such as cholesterol, the gallic acids, and the blood and plant pigments and their derivatives. These measurements provide at least some indication of the possible range and mechanism of infra-red effects; for chlorophyll, phæophytin, and methyl phæorbid do not absorb up to 2·12 μ, and cannot therefore be the starting-point for any biological effects stimulated by these waves, while oxyhæmoglobin, reduced hæmoglobin, and hæmochromogen show a distinct absorption band between 0·92 and 0·95 μ and could therefore conceivably act as photosensitisers when exposed to radiation of this wave-length. The technique appears to have been excellent and painstaking. Some of the measurements are entirely new, although Dr. Merkelbach is hardly justified in claiming this for piperidine and quinoline, for the positions of their absorption bands were indicated in 1905 by Coblentz.

The whole question of the photo-activity of infra-red radiation needs clearing up, and especially perhaps its biological effects. It is to be hoped that the next few years may bring enough knowledge to enable these effects to be studied on a proper physical basis.

Minor Maladies and Their Treatment

Seventh edition. By LEONARD WILLIAMS, M.D. London: Baillière, Tindall and Cox. 1937. Pp. 439. 10*s.* 6*d.*

Dr. Leonard Williams is an entertaining writer, if not always an instructive one. In the seventh edition of his well-known book there is an entirely new chapter on dietetics, a subject on which he holds positive views. Nature, he reminds us, combines foods in such a way as to render them acceptable to our digestive organs, and "commercial glucose, created by pouring nitric acid on to starch, is a sorry substitute for a bunch of grapes." The cooking of food, he thinks, is responsible for "adenoids, rickets, . . . criminals, pansies, and village idiots," but he adduces no evidence in support of this ingenuous contention. Excessive intake of protein he holds responsible for many sinister maladies such as gout but, if this is true, it is difficult to explain the increasing rarity of that disease in an age when mankind is probably consuming more protein per head of population than at any previous time. He condemns, perhaps rightly, "the furtive fill-up which goes by the name of 'elevenses,'" and even afternoon tea, but some doctors, and even more elderly patients, will be prepared to break a lance with him in defence of the night-cap. The rest of the book, which has been thoroughly revised, contains chapters on such matters as indigestion, constipation, and minor glandular

insufficiencies. There is a chapter on insanity, though this can hardly be said to belong to the sphere of minor maladies. The reader must not look upon this book as a text-book, for he will find little therein in the way of solid instruction which would be generally accepted, but he will find it provocative, and anything but dull.

Recent Advances in Entomology

Second edition. By A. D. IMMS, D.Sc., F.R.S., Reader in Entomology, University of Cambridge. London: J. and A. Churchill. 1937. Pp. 431. 15s.

IN its second edition this volume has been enlarged by 56 pages. It deals with the same selected range of topics as its predecessor: morphology, metamorphosis, palæontology, sense organs and behaviour, coloration, certain aspects of ecology with their practical application, parasitism, and biological control. Each of these subjects is well reviewed and the selection serves to illustrate the interdependence of pure and applied entomology. Insects of medical importance figure rather little in the argument; but in most respects the principles of ecology are the same in all groups of insects, and observations on harmless species or on agricultural pests can be instructive to the medical entomologist. Much of the matter is in itself highly interesting quite apart from its bearing on practical problems.

Ocular Fundus in Diagnosis and Treatment

By DONALD ATKINSON, M.D., F.A.C.S., Consulting Ophthalmologist to the Santa Rosa Infirmary, San Antonio, Texas. London: Henry Kimpton. 1937. Pp. 142. 45s.

THE author's main theme is to show the importance of ophthalmology in general medicine, and he succeeds in doing this. He describes the practical application of the ophthalmoscope, and then devotes chapters to the normal fundus, the retinal vessels, optic nerve, vitreous, retina, choroid, and the usual ophthalmoscopic manifestations in special diseases. This work is profusely illustrated at the expense of the text which has been rigidly condensed. Among the illustrations are 58 coloured plates, many of which have been made by the author himself. These may lack the finish and finer points to be seen in the work of a professional artist but they afford a good example of what can be achieved by an ophthalmic surgeon without expert help and of the value of being able to make drawings as a record of clinical experience. In a future edition the coloured plates of angioid streaks, retinitis juxta papillaris, and coloboma of the optic nerve might be replaced as they do not show clearly the typical features of these diseases.

There are some errors and some omissions in the text. Discussing the tortuosity of retinal vessels (p. 38) Mr. Atkinson says that "straight vessels are apt to be normal vessels." Friedenwald has demonstrated that straightness of the retinal vessels with branches at acute angles is a condition associated with arteriosclerosis. Among the causes of darkness of the retinal vessels Vaquez's disease is not mentioned; disseminated sclerosis has been omitted as an ætiological factor in retrobulbar neuritis, and Leber's disease is not included among the causes of optic atrophy. The author's remarks on the differential diagnosis between glioma, retinæ, and miliary tubercles in the choroid give the impression that in the former disease the lesion is a single nodule and in the latter the nodules are multiple; unfortunately for the diagnostic value of this distinction glioma retinæ may arise from several sites in the retina at the same time. The pathology of this neoplasm is not well explained and the coloured illustration is hardly that of a typical example. The vigorous application of antiluetic measures in the treatment of syphilitic lesions of the optic nerve, as here recommended, is out of favour with a number of experienced ophthalmic surgeons, and some caution should have tempered this advice.

The book is well produced, the print easily readable, and the illustrations mostly clear and unambiguous.

Quarterly Journal of Medicine

THE October issue contains the following papers:—

STUDIES IN GRAVES' DISEASE. I. Alterations in Gastric Secretion and Correlated Blood Changes. By Florence Louis and Lucy Wills (Royal Free Hospital). Of 18 cases of Graves's disease 15 showed diminution of gastric secretion and absence or diminution of free acid after histamine stimulation. Volume and acidity both increased after thyroidectomy. The plasma chloride level was usually low normal before operation and subnormal after operation. Changes in the opposite direction were shown by one case of myxœdema.

PSYCHOLOGICAL FACTORS IN ASTHMA-PRURIGO. By C. H. Rogerson (Guy's Hospital). Thirty unselected children with asthma-prurigo were studied psychologically. Their mean intelligence quotient was much higher than that of controls. Among their personality characteristics, over-activity, over-anxiety, and irritability were outstanding. In their environment parental over-anxiety and over-protection were common, but did not entirely account for the peculiarities of the children; the evidence suggests that their personality traits are in some degree constitutional. The incidence of asthmatic attacks was related in a general way but not intimately to psychological difficulties. Psychological treatment seemed to help in causing improvement both in asthma and in prurigo.

ISOLATED UNCOMPLICATED DEXTROCARDIA. By D. S. Stevenson (Glasgow). A case is described in full and the findings compared with those in a dissected museum specimen.

HUNTINGTON'S CHOREA IN SOUTH WALES. By John Spillane and Robert Phillips (Cardiff). Twenty-four cases, in six families derived from the county of Pembroke, are described and discussed. Unaffected members of tainted families showed no sign by which the later development of chorea in them could be foretold. Prevention of marriage of any member of affected families is advocated.

LUNG CHANGES IN INFLUENZA. By J. G. Scadding (British Postgraduate Medical School). A detailed clinical study of the pulmonary features of 58 cases of influenza occurring in last winter's epidemic; from 4 of them the influenza virus was isolated. The changes vary greatly, and range from mere tracheitis, through patchy suppression of breath sounds at the bases, and signs of œdema of the bases, to frank consolidation. They correspond fairly closely in kind with the changes described in the 1918 pandemic, but were less severe. Pneumococci predominated in the sputa of most cases with consolidation. The variable course of the disease and nature of pulmonary involvement can be attributed to varying combinations of virus and bacterial infection, each of which may be of any degree of severity.

PLASMA LIPIDS IN THE DIAGNOSIS OF MILD HYPOTHYROIDISM. By Eldon M. Boyd and W. Ford Connell (Queen's University, Ontario). In 16 cases of mild hypothyroidism, subsequently responding to thyroid treatment, all the plasma lipids except neutral fat were increased above their normal ranges. In 19 cases, superficially similar but not responding to thyroid treatment, the plasma lipids lay within normal limits. Estimation of plasma lipids is therefore an aid in the recognition of mild hypothyroidism.

THE LANCET

LONDON: SATURDAY, NOVEMBER 20, 1937

THE SPECIALIST'S RESPONSIBILITY

IN the recent case of MORRIS *v.* WINSBURY-WHITE a patient made an unsuccessful attempt to enlarge to the utmost limit the legal responsibility of the surgeon. In effect he sought to treat the surgeon as though the latter's promise of personal attention amounted almost to a guarantee against accident or the carelessness of others. Mr. Morris was operated upon for removal of the prostate gland. Two months after his discharge from hospital his condition led to the taking of an X ray photograph. This revealed the presence of a piece of tube either wholly in the perineum or partly in the perineum and partly in the bladder. How had it got there? Was it the prevesical tube, inserted in the preliminary operation for draining the bladder? Or was it what the judge for convenience described as the perineal tube—a tube such as was inserted at the major operation and was replaced and changed and from time to time shortened? The actual tube was not produced in court; an operation was performed to extract it as soon as its presence was detected; but on removal it was, without any sinister intention of concealing evidence, thrown away. Its identity was thus a matter of inference. The judge was satisfied that it could not have been left in the body at the preliminary operation. Had it been so, the surgeon's fingers, exploring the bladder when the bladder was like a punctured balloon, must have discovered it at the major operation. The judge was also satisfied that it had not been left behind at the major operation. He accepted another theory to explain its presence, as he stated in his judgment which is substantially reported elsewhere at p. 1211. The perineal tube fell out from time to time when the patient had his motions; it would then be replaced by a nurse or by one of the hospital doctors. It was possible that on some occasion a mistake might be made and a second tube inserted while a tube was already in position. The plaintiff, the victim of this regrettable and apparently unprecedented occurrence, was naturally inclined to hold the surgeon responsible. The judge, therefore, was called upon to decide whether there had been any special contract on the part of the surgeon to assume liability for every contingency. If there was no such contract, how far was a specialist, performing an operation at a hospital and from time to time visiting the patient thereafter in the hospital ward, liable for anything which happened in the ordinary routine?

Mr. and Mrs. Morris gave evidence in support of their view that Mr. Winsbury-White had undertaken entire responsibility. Mr. Morris had thought of going into the Freemasons' Hospital. Mr. Winsbury-White preferred that he should go into St. Paul's Hospital in Endell-street; he himself would be able to give the case his "personal attention" as he visited the hospital three days a week; the Freemasons' Hospital was further off and he would have to make a higher charge if Mr. Morris went there since the longer journeys would take up extra time. Whatever the exact words used and whether the arrangement was called a special contract or not, the judge came to the conclusion that the agreement or understanding merely embodied or emphasised the ingredients of the ordinary case where a surgeon is retained to perform an operation of this kind. It was involved in the retainer that he should perform the operation personally and should pay such subsequent visits as were necessary after the operation to see how the patient was progressing under the nurses and the resident medical officers there. In this respect, said the judge, Mr. Winsbury-White performed his undertaking. On two other important issues the court was in the defendant's favour. Mr. Morris, in the preliminary pleadings in his action, had not put forward the case that Mr. Winsbury-White was responsible for the acts of the nurses and the hospital staff; this should have been made plain from the beginning; the plaintiff should have named the particular people alleged to be the defendant's agents and the particular acts of negligence. But, if these matters had been specified, the judge would still have decided this point against the plaintiff.

> "I think it is well established as a matter of law that the resident medical officers in a hospital of this kind, and the nursing staff, are not the agents of a specialist surgeon who comes and performs an operation of this kind, at any rate in so far as they are performing the ordinary routine which have to be carried out in a hospital of this kind. The very reason for a patient entering a hospital of this kind—and it is inherent in the arrangements that he makes with the specialist—is that he will go somewhere where he will receive nursing attention, and where he will also receive some attention from the resident medical officers in the hospital."

This is a valuable re-statement of the law. As Mr. Justice Tucker observed, it could not have been argued that the specialist was liable for an error in putting a hot-water bottle into the patient's bed. The plaintiff's counsel contended that the insertion of a tube was not such a routine matter but involved much more skill and care. The judge did not agree that the surgeon could be liable for the changing of a tube which necessarily takes place frequently during the progress of convalescence. He even thought that, as the wound healed and the tube was shortened, the removal, shortening, and replacement were an "ordinary routine hospital process"; not only were the resident medical officers perfectly competent to perform it, it was their function and duty to do so. It was unthinkable that the specialist surgeon should attend at the hospital whenever this process became necessary; if it was not his duty to attend, he was not responsible for any negligence in the performance of these routine duties by the nursing staff or the resident medical officers.

The final argument on behalf of Mr. Morris was based on the legal phrase *res ipsa loquitur*. If a patient, surrendering his body to the surgeon, lies unconscious on the operating-table or helpless in bed and a tube is left in his body which has no business to be there, then there must be negligence somewhere—the thing speaks for itself. In those circumstances, it was argued, the onus is on the surgeon to prove that he was not negligent, and the plaintiff need not show exactly when, where, and how the acts of negligence occurred. The judge rejected this contention. It might have been successful if Mr. Morris had alleged that the tube was wrongly left in his body at an operation conducted by Mr. Winsbury-White. But Mr. Morris was saying that the tube was wrongly inserted in his bladder at some date between Nov. 27th and Feb. 10th, the period of his stay in the hospital, a time when he was treated by numerous nurses and sisters and by two medical resident officers, with occasional visits by Mr. Winsbury-White. As he was not throughout this period under the control or charge of the defendant, the doctrine of *res ipsa loquitur* was inapplicable —the thing did not speak for itself. Thus the case ended in a victory for the surgeon at all points, the judge expressing himself satisfied that if, after all, the burden lay upon the surgeon to prove that he had not been negligent, Mr. Winsbury-White had, by the evidence of himself and his witnesses, discharged the burden. He had not in any way failed in his duty to Mr. Morris. Something was said by plaintiff's counsel of a possible appeal against the judgment. Meanwhile the result of the case is one on which the Medical Defence Union deserves congratulation. In taking up the cause of the defendant, it was fighting the battle of every specialist who operates at a hospital.

GASTROSCOPY AS AN ESTABLISHED METHOD

THE Wolf-Schindler flexible gastroscope was first demonstrated at a meeting of a medical society in Munich in July, 1932. By the beginning of 1933 it was in regular use in many German clinics. The attention of workers in this country was called to its advantages over the rigid type later in that year,[1] but a considerable latent period elapsed before many of them began to learn to use it, though one at least was inspired to go abroad to study the technique.[2] Now it is creating widespread interest and the issue of two large and authoritative monographs on the subject is timely. One, in English, is by SCHINDLER himself,[3] now a welcome refugee in America; the other, in German,[4] is by GUTZEIT, one of the earliest and most assiduous of the German workers with the instrument, in collaboration with TEITGE. Both are comprehensive and detailed treatises, well put together and produced; both are lavishly illustrated, the German book with 155 excellent coloured reproductions of gastroscopic pictures from Gutzeit's collection, the American one with 96 similar reproductions from Schindler's; the latter are good, but not so beautiful an example of de luxe printing as Gutzeit's. In their subject matter both works cover much the same ground—gastroscopic technique and gastroscopic findings. Schindler has a distinctly superior chapter on orientation in the stomach; with its numerous schematic drawings it looks confusing to the mere reader, but to anyone who has used the instrument it explains very clearly the principle as well as the method of finding one's way about in an irregular obliquely lying hollow organ surveyed through a window in the side of a bent tube. Both authors use substantially the same instrument, made by the Berlin firm of Wolf, whose years of research on the problem are now being rewarded by a large sale. Neither seems to have had experience of the useful balloon device of H. W. RODGERS[5] for moving the window of the gastroscope away from an area of stomach wall with which it may lie in contact.

The supremacy of the Wolf-Schindler instrument has seemed to be well-established, but last summer it was challenged by a Japanese firm who made a modified replica[6] of it with two additions. One is the incorporation of a steel wire and screw device by means of which the tip of the instrument can be bent under control while it is in the stomach; if this works as well as it is said to do, it will be of considerable value, both in making visible the lesser curvature of the antrum and in facilitating the manipulation of the instrument in abnormally shaped stomachs. The other addition is a camera with electrical apparatus for producing very intense illumination of measured short duration to enable photographs to be taken. Gastroscopic photography has hitherto been possible only through rigid straight-tube gastroscopes, and has been of little value; loss of light in the multiple lens system made it impossible with the flexible instrument. It was to be expected that this difficulty would eventually be overcome, but the Japanese photographs, as reproduced, are still such poor representations of what is actually visible that they seem hardly worth taking; they show only gross abnormalities, such as obvious tumours, and fall far short of the gastroscopist's verbal description, supplemented where possible by his drawing.

The permanent rôle of gastroscopy is not yet clear. It is evident that, used as a supplement to radiography, its renders the diagnosis of gastric ulcer and gastric tumours more accurate. Most of those who have used the instrument agree on that, and the consensus has by now probably escaped from the influence of first enthusiasms. It is

[1] See *Lancet*, 1933, **2**, 813.
[2] Edwards, H. C., *Lancet*, 1935, **2**, 1161.
[3] Gastroscopy. The Endoscopic Study of Gastric Pathology. By Rudolph Schindler, Associate Clinical Professor of Medicine, University of Chicago. Chicago: University of Chicago Press; London: Cambridge University Press. 1937. Pp. 343. 34*s*.
[4] Gastroskopie. By Prof. Dr. Kurt Gutzeit, Direktor der Medizinischen Universitätsklinik, Breslau; and Loz. Dr. H. Teitge, Direktor des Städtischen Krankenhaus am Urban, Berlin. Berlin and Vienna: Urban and Schwarzenberg. 1937. Pp. 342. R.M.42.
[5] *Lancet*, 1936, **2**, 438.
[6] Kirihara, S., et al., *Nagoyo J. med. Sci.* June, 1937, p. 1.

therefore reasonable to urge that every large hospital should possess a gastroscope and an experienced gastroscopist. The latter is not made in a month or two; Schindler requires that he should be in the first place a well-trained gastro-enterologist, skilful at handling patients in the psychological sense and getting their confidence, and naturally deft and delicate with his hands, and he remarks further that the beginner will need to make 100 examinations before he learns properly to find the pylorus. Gastroscopy as an aid to diagnosis should therefore be undertaken only by those, suitably qualified, who are in a position to examine large numbers of patients; once they have become expert they need examine only doubtful cases. Expertness is slowly achieved, and the serious study of the art is no short cut to local fame. Gastroscopy as a research technique is bound up with the problem of chronic gastritis, which indeed is now defined in terms of gastroscopic appearances. Schindler and Gutzeit describe these under practically the same headings: superficial gastritis or catarrh, hypertrophic gastritis (with mammillation), erosive gastritis, atrophic gastritis, and the peristomal gastritis that may follow gastro-enterostomy. Schindler makes a tentative effort to sketch a clinical picture and natural history for each of his varieties. Gutzeit gives more attention to the precise description of the changes seen and their explanation in terms of microscopic anatomy, but finds no regular relation between those changes and the patient's symptoms. It is evident that much careful and systematic observation is still needed before the wider significance and relationships of these gastritic changes become clear. Enough has already emerged—such as the finding of extensive atrophic changes in the stomachs of patients with pernicious anæmia, and of kindred changes accompanying carcinoma—to make further study worth while. An understanding of the factors that promote or check these various gastritic changes might well lead to the prevention of many cases of carcinoma and perhaps also of ulcer.

A MEDICAL CLEARING-HOUSE

THE chief medical officer of the Ministry of Health holds a position of responsibility and delicacy. About this time each year he has to submit to his Minister an annual statement of the work of the medical department. This department consists of seven sections, each dealing with a particular body of medical knowledge or experience, and it is the duty of the chief medical officer to collaborate with all these sectional chiefs and to present their views with his own concurrence to the Minister of Health. The Minister is admittedly an amateur—for, as Mr. WALTER ELLIOT agreeably emphasised at a medical dinner last week, the government of this country is carried on by the amateur—and it is appropriate that this should be so, for the chief medical officer's report is directed not primarily to the members of his own profession but to the public at large which has doubts and fears and suspicions and susceptibilities that a medical education removes. This year Sir ARTHUR MACNALTY has had two opportunities of bringing the work of his clearing-house before the public. In his contribution to "The Nation's Health"[1] he was free to range widely over the whole period during which we have had a Ministry of Health and even beyond it, and he drew out a table of changes in mortality over a quarter of a century in certain directions. Taking as his beginning and end points the years 1910 and 1935, he found the mortality per thousand live births at ages 0–1 had come down from 105 to 57. But far more striking than this total mortality, the deaths from common infectious diseases were 2 instead of 7, from tuberculosis 0·5 instead of 4, and from diarrhœa and enteritis 5 instead of 13. Taking another figure he found the death-rate at ages under 15 per million living had fallen from 750 to 143 for measles, from 200 to 47 for scarlet fever, and from 798 to 170 for whooping-cough. He is quite justified in saying that these are remarkable and indeed amazing figures. The changes may fairly be attributed, at any rate in part, to the operation of public preventive and clinical services, and this has happened to a people which, the *Times* once said, would prefer to take the chance of cholera rather than be bullied into health.

The second opportunity, the report[2] before us, deals with the progress of a year and does not lend itself to flights of imagination. But here too there are tokens of the long-range view. As regards cancer, for example, the figures set out by the Registrar-General seem to the plain man to have no other explanation than that the disease is increasing. But one of the merits of the annual report is that it is tendentious, in the sense that the chief medical officer has always in his mind the possible misunderstanding of figures and goes halfway to meet it. He gives this year, as was done five years ago, the standardised mortality-rates from cancer for individual organs, taken from the Registrar-General's review, and he shows that for accessible sites such as lip, tongue, jaw, uterus, and skin, the rates have remained almost stationary, with a tendency to fall during the past five years. These are the sites in which increasing accuracy of diagnosis can have played small part. The fall must be due to diminished incidence or to the effect of treatment or a combination of the two. Another group, consisting of stomach, intestines, rectum, lung, pancreas, and prostate, shows a tendency to rise over this period. On the rates for such organs treatment can have little effect; the rises must be due to increased incidence or more accurate diagnosis or both. General experience suggests that the latter cause is the more important, and there is an item which makes this even more probable—namely, the experience of an intermediately placed group, such as pharynx and œsophagus, where diagnostic and therapeutic changes have played little part. Here too the

[1] Reprinted from the National Health Number of the *Times* of Sept. 30th, 1937. 2*s*. 6*d*.

[2] On the State of the Public Health. Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1936. H.M. Stationery Office. 1937. Pp. 254. 4*s*.

changes in rates are small, suggesting that changes in incidence are also small.

The question of liaison between various branches of our health services, which is attracting increasing public attention, is passed over by Sir ARTHUR with the remark that central coöperation is secured by regular consultation and conference. At the recent Royal Sanitary Institute congress held in Birmingham Dr. G. P. CROWDEN drew attention[3] to the lack of coördination between the industrial medical services and the general stream of preventive medicine. He showed how, quite apart from the official Home Office service, industry had begun to create a medical and nursing personnel of its own to fill gaps in the existing structure. The difficulty is created by the small firm with limited resources; only a national service would make the worker's health independent of the financial resources of his employer. On the purely technical side there may not be much to learn; it is rather a question of spreading already ascertained knowledge. Mere inspection is not the answer. What is required is that the whole basis of occupation shall come within the purview of medicine, and that office workers, shop workers, and factory workers alike shall receive from an independent body that advice and protection which modern conditions require. It was obvious from the feeling at the congress that what is now being increasingly supplied in the way of medical service to the employees of large concerns should in the future be available to all. But the speakers, as reported, did not drive this point home to its logical conclusion. Such a service would not be able to deal solely with palliative measures. It would soon have exhausted the benefits to be derived from merely making work physiologically safe and would become involved in far wider and more fundamental issues. Physiologically arranged hours of work and physiologically adequate wages would as problems rub shoulders with the employment of the partially disabled, such as epileptics, diabetics, asthmatics, and persons incapacitated by accident. It might mean, in the case of epileptics, the creation of special occupational centres, or, in the case of those incapacitated by accident, a change in the whole conception of rehabilitation and compensation. The issues raised are manifold and of great social interest; a progressive industrial community cannot for much longer ignore them. It might be well if employers and trade unions, with medical men competent to advise them, were to set about evolving a scheme which the public could accept.

[3] *J. R. Sanit. Inst.* October, 1937, p. 276.

ANNOTATIONS

THE TIMING OF OVULATION

THE importance of ovulation in the sexual cycle has long been recognised; but since the process could not be followed accurately without surgical exposure of the ovaries little advance of a practical nature has been made in its study. The description by Burr, Hill, and Allen [1] of a method for the detection of ovulation in the intact rabbit therefore opened a new line of approach. They have devised an instrument, with special abdominal and vaginal electrodes, which records the voltage changes occurring in an animal during ovulation. In carefully controlled experiments they found that only slight changes in electrical potential take place in the resting stage, but a considerable increase in voltage is recorded as each follicle ruptures. In one animal ovulation was seen by direct observation and coincided with the change in voltage described. They claimed that with this technique it is possible to determine with certainty in the intact animal the time and duration of ovulation, the instant of follicular rupture, and the exact number of ovulations. These original observations of Burr, Hill, and Allen have been confirmed by Reboul, Friedgood, and Davis,[2] and the application of this method to the detection of human ovulation is now reported by Rock, Reboul, and Wiggers.[3] With one electrode on the anterior abdominal wall and one on the cervix they were able to record potential changes clearly indicative of ovulation. Laparotomy was performed ten hours later and sections of the ovary showed a recent point of follicle rupture.

By means of this new technique it should be possible to measure accurately the action of gonadotropic hormone therapy on the follicle. The time-relationship between ovulation and menstruation, with its important bearing on the control of human conception, should become matter of fact rather than fiction.

[1] Burr, H. S., Hill, R. T., and Allen, E., *Proc. Soc. exp. Biol., N.Y.* 1935, **33**, 109.
[2] Reboul, J., Friedgood, H. B., and Davis, H., *Amer. J. Physiol.* 1937, **119**, 387.
[3] Rock, J., Reboul, J., and Wiggers, H. C., *New Engl. J. Med.* Oct. 21st, 1937, p. 654.

BENIGN SPONTANEOUS PNEUMOTHORAX

IN our own columns last year Dr. Ian Gordon [1] came to the conclusion that the cause of benign spontaneous pneumothorax is rupture of an air-containing bulla or cyst on the surface of the lung. In five cases described by him a bullous condition of the lung was shown on radiography, but he admitted that as a rule it is impossible to make a diagnosis during life. Castex and Mazzei [2] have now produced an elaborate study of the anatomy, radiology, and thoracoscopic signs of subpleural bullæ and the clinical aspects of benign spontaneous pneumothorax, based on twelve cases. This benign type of spontaneous pneumothorax must be clearly distinguished from the type due to rupture of an emphysematous bulla in cases of generalised emphysema of the lung, of which an instance was recently described by Willcox and Foster-Carter.[3] The points of distinction between subpleural bullæ and the bullæ associated with generalised pulmonary emphysema are: (1) that the former are found in young people; (2) that the lungs are otherwise healthy or show at most a small localised lesion, not actively tuberculous; and (3) that the bullæ are small or moderate in size, multiple, and situated immediately beneath the visceral pleura. Emphysematous bullæ, on the other hand, occur as a rule in older people; the

[1] *Lancet*, 1936, **2**, 178.
[2] Castex, M., and Mazzei, E., *Arch. argent. Enferm. Apar. resp. Tubere.* 1937, **5**, 97.
[3] Willcox, A., and Foster-Carter, A. F., *Lancet*, August 7th, 1937, p. 315.

lungs are emphysematous; and the bullæ are larger (sometimes very large) and either solitary or few in number. Subpleural bullæ are formed by rupture of the subserous connective tissue layer in areas where the lung tissue is fibrotic, poorly developed, or of lowered resistance. Fibrosis appears to be by far the commonest cause; it may originally have been of tuberculous origin, but signs of tuberculosis have disappeared and the fibrous tissue is unspecific in structure. Though it is sometimes possible to detect the bullæ in a radiogram, they are by no means always visible. Thoracoscopy, according to Castex and Mazzei, offers valuable diagnostic aid, and they describe in detail, with the help of beautiful coloured plates, the appearances they regard as characteristic. The formation as well as the ultimate rupture of subpleural bullæ is thought to be related to exertion (e.g., coughing or muscular effort). As regards the clinical features, benign spontaneous pneumothorax was found to affect young, apparently healthy people, chiefly males; it lasts for about a month, and ends in complete recovery, though it may recur with the rupture of another bulla; it is not associated with fever or other signs of toxic absorption; and pleural effusion is absent or slight; the lungs and pleuræ show no radiological alterations pointing to tuberculosis. Castex and Mazzei suggest that such a clinical picture is usually best designated "pneumothorax of scarred lung."

INCIDENCE OF JUVENILE RHEUMATISM

THE incidence and manifestations of rheumatic infections in childhood vary in different parts of the world, and rheumatic fever is said to be rare among children in tropical countries. Nevertheless the experiment of transporting rheumatic children from the northern parts of the United States to a subtropical climate in Florida has not been an unqualified success [1]; hæmolytic streptococcal infections appear to be less severe in Florida than in Boston, but there were relapses and recurrences of rheumatism when the children were living in the south. Writing from another part of the globe Maddox [2] estimates the incidence of rheumatic heart disease in New South Wales as between 0·3 and 0·6 per cent. of the whole population—an incidence certainly lower than that in this country or in North America. He could find no definite relationship to known damp areas, either damp ground or poorly drained areas. The disease is seen more often on the table-lands and slopes than in the coastal areas; except that a high incidence was observed in the neighbourhood of salt-water lagoons. Examination of the distribution of acute rheumatism in Sydney showed that most of the patients came from the poorer industrial quarters of the city. Boyd Graham [3] finds that in Victoria, on the other hand, more cases arise in the middle group of hospital out-patients than in the poorest or the best-off groups. The economic position of all children attending the Children's Hospital, Melbourne, as out-patients was classified as: lowest class 67 per cent., middle class 20 per cent., and better class 13 per cent., whereas for 167 rheumatic children the respective distribution was about 25, 50, and 25 per cent. Similar observations have sometimes been made in this country (see p. 1196) and the explanation has been offered that the children of the very poor, with their overcrowding, keep a good deal warmer than children who live in roomier but chillier houses. In Bristol, a city justly famous for research on this subject, Bruce Perry and Fraser Roberts [4] have been studying the variability in the incidence of rheumatic heart disease, and find a statistically significant association between the density of persons per room in the various city wards and the incidence of rheumatic heart disease. The most obvious reason would be that close association favours droplet infection, but a control investigation showed no significant association between overcrowding and scarlet fever.

[1] *J. Amer. med. Ass.* Oct. 16th, 1937, p. 1308.
[2] Maddox, K., *Med. J. Aust.* 1937, **1**, 394, 425, 464.
[3] Graham, H. B., *Ibid*, p. 944.

DENTAL BENEFIT FOR THE ADOLESCENT

OPENING the thirty-third session of the Dental Board of the United Kingdom on Nov. 10th Sir Francis Acland remarked that the gap in the public provision of dental treatment between the attainment of school leaving age and the acquisition of a title to dental benefit would be much reduced by the new provisions for adolescent insurance. At present, he said, a boy or girl who has become a member of an approved society at any time during 1937 will be ineligible for dental benefit until 1940, the normal waiting period being about 2½ years; but when the Bill comes into effect, as it should, in the New Year the waiting period would begin to run from the date of entry into juvenile membership at any time after the age of 14 had been reached. Sir Francis has long advocated the abolition of the gap in providing proper care of the teeth for anyone entering employment after leaving school. The best dental care given by school dentists may lose its effect if there is an interval during which an adolescent can receive no assistance in keeping his teeth in good condition. Sir Francis himself would like dental treatment to be coterminous with entry into employment. Unfortunately the time had not yet come for converting dental care as an additional benefit into a benefit to which all insured persons are entitled.

OPIUM: PROPOSED LIMITATION OF RAW MATERIAL

MUCH valuable information about the licit and illicit traffic in opium and narcotic drugs was furnished at the eighteenth session of the Assembly of the League of Nations, which terminated on Oct. 6th. The annual average world needs for legitimate purposes of morphine is now accepted as being 29 tons, of heroin one ton, and of cocaine 4 tons; these quantities are insignificant compared with the extent of illicit manufacture and world-wide distribution, notably in the Far East. The Assembly called attention to the failure of some thirty States, which had signed the Convention of 1936 directed to repression of illicit traffic, to deposit their ratifications. The Convention was framed with the idea that it would be concluded and ratified as a matter of urgency, since its provisions offered, in certain cases, the only effective means of proceeding against traffickers and thus filled an important gap in existing international legislation. While China has been aiming at complete suppression by 1940 the seizures by Chinese authorities in 1936 amounted to 167 tons of raw opium, half a ton of heroin, a quarter of a ton of crude morphine, a quarter of a ton of morphine, and 7½ tons of red and white pills. The Assembly again repeated its earnest appeal to Japan to take effective measures, without delay, to stop the clandestine manufacture and traffic carried on by Japanese subjects in China. The need for limiting the production of raw material without which the

[4] Perry, C. B., and Roberts, J. A. F., *Brit. med. J.* August 28th, 1937, Suppl. p. 154.

international control of the drug traffic must be incomplete was again emphasised. The legitimate annual production for the world needs of raw opium has been estimated as rather more than 1000 tons, while the average annual production between 1929 and 1935 was 1600 tons, excluding the opium raised in China and Afghanistan which are large producers. To this must be added the enormous accumulated stocks which alone would suffice to meet legitimate needs for two or three years. The conclusion reached by the Assembly was that "both from the humanitarian and the economic points of view, excess production on such a scale renders necessary a limitation of the raw material." It remains to be seen whether this conclusion will be implemented by the Governments concerned.

RISKS OF CARBON DIOXIDE INHALATION

CARBON DIOXIDE, which until recently was regarded as a noxious gas, has become so favourite an instrument in the anæsthetist's hands that there is danger of the pendulum swinging too far in the new direction. The benefits that moderate doses of the gas confer by stimulating respiration easily delude the unwary into obliviousness of the harm done when the concentration of the gas is not accurately controlled or when the person inhaling it is inordinately susceptible. There is much variability in sensitiveness to carbon dioxide and, as is well pointed out by R. M. Waters,[1] the mechanism by which it is eliminated from the body is a complicated one. This mechanism is naturally affected by abnormal bodily conditions, and these may enhance an individual susceptibility to such a degree that concentrations of carbon dioxide harmless to the normal person become highly dangerous. Waters, among others, had studied the effects of carbon dioxide both on the healthy and the sick, and points out dangers that may accompany rebreathing on the administration of carbon dioxide to those who were ill. The physical signs of carbon dioxide disturbance are either those simulating collapse—i.e., pallor, quick gasping breathing, and low blood pressure—or else undue muscular activity, shown first by twitching of the smaller muscles of the face. When any of these signs appear during an administration in which there may be deficient elimination or excessive intake of carbon dioxide the possibility of poisoning by this gas should at once come to mind. The chief remedial measure, after withdrawing the anæsthetic, is inhalation of pure oxygen.

AN EARLY MEDICAL REGISTER

ALTHOUGH the Church claimed jurisdiction over the medical profession in the Middle Ages, the first legal measure to regularise its control was enacted in 1512, when the government of Henry VIII obliged all who wished to practise within a seven-mile radius of Saint Paul's to be licensed by the Bishop of London, and those who proposed to work in the provinces to be examined and approved by the bishop of the diocese. The seventeenth and eighteenth century applicant for such a licence was expected, in common with the cleric and the schoolmaster, to make a written declaration in the diocesan "Subscription Book" of his allegiance to the King, the Thirty-nine Articles and the official Liturgy. Every diocese possesses a potential mine of local historical knowledge in its series of these books, and Mr. E. H. Carter,[2] by a laborious analysis of those of Norwich, has shed some fresh though rather dim light upon medical practice in that district between 1660 and 1744. Subscription, though compulsory in theory, was not rigidly enforced, and only for the smaller villages do the books provide anything approaching a complete register of medical practitioners. At this time medicine and surgery were undertaken by anyone from the blacksmith to the village ancient, and only whole-time practitioners would journey to Norwich to obtain a legal status. Of the 650 medical subscribers in the 84 years reviewed, 66 applied for a licence to practise medicine and pharmacy, 382 surgery, and 89 both medicine and surgery. The remaining 113 were specialists in blood-letting, the care of the teeth, or the cure of the green sickness, sore eyes, distracted persons, ulcers or sore breasts. Specialism, in fact, does not seem to be so modern a development after all, for we have yet to see a whole-time mastitologist. Only three subscribers held a medical degree, the Cambridge M.D., though the list includes a professor of surgery and one of medicine; and a number of practitioners, and alas, several schoolmasters, were illiterate and signed by mark. In the later years 18 women appear as surgeons, phlebotomists, bone-setters or curers of sores and green wounds. The medical oath was a general one, in the same terms as the schoolmasters', but midwives were required in addition to undertake "not in times of extremity to forsake the Poor to attend the Rich, but to act in all things agreeable to a good conscience," and to forswear 14 items, including witchcraft, abortion, child-murder, and, of all things, payment. We can understand now why in 80 years only 15 midwives subscribed.

HUMAN PULMONARY TUBERCULOSIS FROM BOVINE TUBERCLE BACILLI

IN the past ten years Prof. Bruno Lange,[1] of the tuberculosis section of the Robert Koch Institute in Berlin, has determined the types of tubercle bacilli—whether human or bovine—found in the sputa of 148 adults with pulmonary tuberculosis. The human type was found in 136, the bovine in 9, and both in 3. The clinical records of the bovine infections gave no support to the idea that the disease runs a comparatively mild course in man when the type of tubercle bacillus is bovine; nor did these cases differ in character from the others. Of the 148 patients whose sputum was examined, 69 had been engaged in cow-milking, and among these there were 8 bovine infections and 1 mixed. In all but 1 of the 9 cases of pure bovine type infections, the mischief seemed to have been done in adult life, and the infection was apparently by inhalation rather than ingestion; while in the 3 mixed cases the bovine infection was regarded as a superinfection. Lange's practical conclusion is that adolescents between 15 and 20 should not be employed as milkers of herds that are not under continuous veterinary supervision, and that such adolescents should also be protected from overwork. It is probable, he calculates, that of the 50,000 persons who die of tuberculosis in Germany every year, about 1000 die of bovine infections. In 1933 the Ostertag system was responsible for the slaughter of 42,478 cattle suffering from open tuberculosis. Yet the reports of numerous veterinary surgeons show that tuberculosis is increasing from year to year in cattle in Germany. This is not to be wondered at for, as Ostertag himself has pointed out, four-fifths of the herds are subjected to no effective

[1] *Med. Surg. J.* October, 1937, p. 221.
[2] The Norwich Subscription Books. By E. H. Carter, M.A. London: Thos. Nelson and Sons. 1937. Pp. 201. 21*s*.

[1] *Dtsch. med. Wschr.* Sept. 24th, 1937, p. 1475, and Oct. 1st, p. 1506.

action against open tuberculosis. There is also evidence of a relative increase in the number of bovine infections in man. Prof. Lange deplores the common impression that the bovine type is but slightly pathogenic to man and that a "light" infection with it is a useful means of immunisation. His advice is prevention of infection with the bovine type at all costs, and he endorses a new plan recommended in 1935 by Pröscholdt. It consists in creating tubercle-free herds with the aid of tuberculin-testing, and the official subsidising of such herds in various ways. Until such a plan is completely effective—and it may take a score of years—all milk coming from herds not guaranteed tubercle-free should be pasteurised, and when pasteurisation is impossible the milk should be brought to boiling point for a brief spell in the home. The community should be taught that pasteurisation or quick boiling does not spoil milk as food for infants; whatever loss there may be of the vitamin-C content of milk thus treated can be made good by the inclusion in the dietary of other vitamin-rich foods.

VITAL STATISTICS OF 1936

IN Part I of his annual review of the country's mortality experience[1] the registrar-general for England and Wales handles with customary detail and skill the 495,764 deaths registered in 1936. With an estimated population of nearly 41 millions (194,000 more than the figure for 1935) the result is a crude death-rate of 12·1 per 1000 living and a standardised death-rate of 9·2. The latter rate is a fraction above the record rate of 9·0 recorded in 1935 but is lower than the figure for any previous year. The infant mortality-rate of 59 is also slightly above the level of the previous year and equals the rate recorded in 1934. Subdivision of this rate shows two points of some interest. The mortality of illegitimate infants in 1936, 88 per 1000 born, is the lowest yet registered and is appreciably below the rates in the quinquennium 1931–35, when it was 103 per 1000, and the decennium 1921–30 when it was 130 per 1000. Analysis of the total infant mortality by age within the first year shows a very slight fall, to the lowest figure yet registered, of the refractory rate of the first month of life (30·16 deaths per 1000 born in 1936). This neonatal rate varies from 25 in Greater London to 31 in rural districts and 33 in the county boroughs. The total infant mortality-rate shows its customary variations in different parts of the country. In some of the southern administrative counties it is as low as 35–38 (Sussex, Cambridge, and Hertfordshire), in northern counties it rises to 70 (Durham and Northumberland). In such county boroughs as Bournemouth, Bath, Hastings, and Croydon it falls to nearly 40, in others such as Gateshead, Newcastle, Salford, and Warrington it rises to 90, or more than twice as high. Such figures reveal the scope still remaining for improvement.

The death-rates at later ages show that between 5 and 45 years the experience of 1936 was very favourable, several of the rates being below any previously registered. The increase in mortality of 1936 over 1935 took place in the first five years of life and at ages over 45. From a study of the causes of death it is found that the mortality from scarlet fever (43 deaths per million at ages under 15) was less than in any previous year, although over a hundred-thousand cases were notified. Diphtheria fell below the levels of 1934–35, whooping-cough increased above them. Deaths from puerperal causes numbered 2301, representing an appreciable fall in the death-rate from sepsis (1·61 per 1000 births in 1935, 1·34 in 1936) but no change in other causes under this heading. The stillbirth rate varies from 33 per 1000 total births in the south-east to 45 in the north and 54 in Wales. Tuberculosis, both all forms and respiratory, shows its usual new low record. The respiratory tuberculosis rate (standardised) fell from 620 per million in 1931–35 to 552 in 1935 and 525 in 1936. Cancer rose very slightly from 1000 per million in 1931–35 to 1001 in 1935 and 1010 in 1936. Other causes of mortality showing some rise over their levels in 1935 are the enteric group, measles, whooping-cough, diabetes, heart diseases, and violence. The level of influenza was relatively low. Deaths from violence include roughly 5000 suicides (of which one-third took their life by gas), 108 murders, and over 6000 fatal accidents in railway, road, and air transport.

Of the total half-million deaths one-tenth took place in the first five years of life, 3·3 per cent. at ages 5–19, 8·1 per cent. at ages 20–39, 19·3 per cent. at 40–59, and nearly 60 per cent. at ages over 60.

These few quotations from 406 pages of tables merely illustrate the usual highly specialised information available to those who would study the latest records of the mortality of different parts of the country.

[1] The Registrar-General's Statistical Review of England and Wales for the year 1936. Tables. Part I, Medical. H.M. Stat. Office. 6s.

THE NOBEL PRIZE FOR CHEMISTRY

A FEW people who ought to know better still say that they "don't believe in vitamins," but they must find it hard to assimilate this point of view with the recent award of the Nobel prize to three workers on vitamins. Hard on the heels of the award in medicine to Prof. Szent-Györgyi for his work on vitamin C comes the announcement of an award in chemistry divided between Prof. P. Karrer of Zürich and Prof. W. N. Haworth, F.R.S., of Birmingham. Both these workers have to their credit, among their most recent contributions, important discoveries in the chemistry of the vitamins.

The award to Prof. Karrer was made for his work on the carotenoids and on vitamin B_2. The carotenoids are the fat-soluble yellow pigments which are found in plants, of which the carotene of the carrot is the most familiar. Prof. Karrer has sorted these out into hydrocarbons and the acids and alcohols derived from them, and has worked out their structural relation to one another and to the colourless vitamin A. A big blank in knowledge has been filled in with one of the most æsthetically satisfying pictures in chemistry, and Prof. Karrer is the chief artist. With regard to vitamin B_2 his work has been on the flavin component of the vitamin-B_2 complex. Flavin again is a yellow pigment but a water-soluble one, occurring for instance in egg-white, liver, and milk, and for its synthesis Karrer and the German chemist, Kuhn, working separately, are together responsible.

Prof. Haworth, who shares the prize with Prof. Karrer, has worked for many years on the chemistry of the carbohydrates, and particularly on their structural formulæ, the establishment of that for the biose sugar maltose being a notable achievement. His great experience in this field placed him in a particularly favourable position for solving the structural formula of vitamin C, ascorbic acid. For some time a number of rival solutions were in the field, but the formula worked out by Haworth and his colleague, E. L. Hirst, is that which is now generally accepted. In this last piece of distinguished

work the discoveries of Haworth and Hirst are complementary to those of Szent-Györgyi rather than of Karrer, though Karrer did also make some contribution to confirming the correct formula for ascorbic acid.

PAINT-BRUSH FOR SCALPEL

THE Royal College of Surgeons has assembled a remarkable collection of works of art by fellows and members. Properly enough, the two most skilful are by a surgeon who made art his profession—the late Henry Tonks—but there are several that run them close and none are without interest. Like most other exhibitions of pictures this one illustrates the difficulty of achieving a genuinely personal style, and one welcomes the planned individuality of Mr. T. H. Somervell's three studies. With less striving for independence fine work has been done by Mr. Foster Moore, Prof. John Hay, Dr. E. W. Twining, and several others among the water-colourists; Dr. Harold Hodgson's architectural detail, for example, is beautiful of its kind. The pictures of wind and trees by Dr. E. B. Waggett, the late Sir Squire Sprigge, and Dr. L. W. Scargill form an instructive contrast, and much may be learnt from the handling of pastels by various contributors. Among the more ambitious of the oil-painters, Dr. A. C. Dalzell uses a now familiar style with outstanding success, and Dr. A. B. Hewlett, employing a somewhat similar technique, is both decorative and convincing. Sir Leonard Hill, F.R.S., shows a fine self-portrait which places him in achievement outside the class of successful amateurs; and there are features of the work of Dr. John Rammell, Dr. W. G. Barnard, Dr. Helena Wright, and (especially) Prof. C. A. Pannett, organiser of the exhibition, that make one wish their painting had not been merely a pastime. Unfortunately only seven works of sculpture are shown: Dr. Leo Spira's, with their strength and spirit, are nearly very good indeed; Dr. Edward Tait's recumbent figure is charming.

The exhibition, which remains open till Nov. 27th, provides unexpected information about the personalities of many distinguished members of our profession, and it is a pleasure to meet them in their happiest moments.

NEW ANTICOAGULANT IN BLOOD TRANSFUSION

IN this country and in the United States sodium citrate is widely used as an anticoagulant in blood transfusion. The indirect transfusion of citrated blood has definite advantages, for both operator and donor, over the direct arm-to-arm technique with whole blood, and it is extremely doubtful whether a small addition of this anticoagulant salt (0·3 g. per 100 c.cm. of blood) is deleterious to the recipient of transfused blood. Such reactions as may occur from time to time are more probably dependent on factors such as atypical agglutinins, uncleanliness of apparatus, the presence of bacterial protein in the distilled water or saline used, and products of metabolism in the donor's circulation. Some observers, however, still maintain that whole blood—i.e., blood without additions or subtractions—should be used in transfusion, and Dr. Hedenius has described an ingenious way of overcoming the usual technical difficulties of whole-blood transfusion. Before the transfusion he injects a preparation called Heparin into the donor so as to reduce the coagulability of the blood, and on p. 1186 he is able to report excellent results from this procedure. The only objections that appear are that the donor might run some small risk by the temporary lengthening of his coagulation-time, that he might be unduly apprehensive about this risk, or that with successive donations he might develop a tolerance or sensitivity. These possibilities though not perhaps important nevertheless mean that for the use of heparin to become established it will have to show distinct advantages over the convenient, safe, and cheap citrate salt.

NEW CENTRE FOR CANCER RESEARCH

WE are informed that the Chicago Tumor Institute, which has been established, not for profit, to conduct research on cancer and to instruct and assist physicians, surgeons, clinics, and hospitals in the diagnosis and treatment of the disease, will open next March. It is to be directed by a scientific committee consisting of Dr. Max Cutler (Chicago), Dr. Henri Coutard (Curie Institute, Paris), Sir Lenthal Cheatle (London), Dr. Arthur H. Compton (physicist, Chicago), and Dr. Ludvig Hektoen (Chicago). Dr. Coutard has been granted leave of absence for three months to work with the million-volt X ray machine in the laboratory of Prof. R. A. Milliken at Pasadena, California, but will return to Chicago next spring. Sir Lenthal Cheatle is now in Chicago and it is stated that he will spend most of his time there in laboratory research and post-graduate instruction. Although the scope of the activities of the new institute will be national, the funds have been raised entirely by citizens of Chicago.

VASODEPRESSION NOT DUE TO HISTAMINE

SOME of the difficulties that may arise in using biological tests are illustrated by the work of Kinard and Martin[1] on the vasodepressor activity of the blood of normal and burnt dogs. Solutions prepared by the method of Best and McHenry[2] were injected into anæsthetised cats. Normal dog's or cat's blood and egg-albumin solution all produced a fall in blood pressure, but the time of onset and the duration of this fall were quite different from those obtained by giving a dose of histamine sufficient to cause an equivalent depression. The blood of burnt dogs gave a greater fall than normal blood, but this might be because of concentration of protein in the blood from loss of fluid. Injection of atropine into the test animal reduced the fall due to blood extracts but did not affect that due to histamine. It was concluded that the vasodepressor action of these test solutions was probably attributable to a protein split-product formed during preparation, and not to histamine.

THE Hamburg School of Tropical Medicine has awarded centenary medals in England to Dr. Philip Manson-Bahr, senior physician to the Hospital for Tropical Diseases, London, and Dr. G. H. F. Nuttall, F.R.S., emeritus professor of biology at Cambridge. The medal is named after Dr. Bernhard Nocht of the Hamburg school, who has been celebrating his eightieth birthday.

ON Thursday, Dec. 2nd, Sir Charles Gordon-Watson will deliver the Bradshaw lecture of the Royal College of Surgeons of England. He will speak on the origin and spread of cancer of the rectum in relation to surgical treatment. On Dec. 9th and 16th Sir Charles Sherrington, O.M., will deliver the Thomas Vicary lecture in two parts. His subject will be Jean Fernel with special reference to his work in astrology. All the lectures will be held at the college at 5 P.M. and fellows and members are invited to attend. Other medical practitioners and students will be admitted on presentation of their card.

[1] Kinard, F. W., Martin, F. N., *Amer. J. med. Sci.* Oct., 1937, p. 560.
[2] Best, C. H., and McHenry, E. W., *J. Physiol.* 1930, **70**, 349.

POST-GRADUATE LECTURES

IN the past few weeks we have published abstracts, or parts, of eleven of the lectures delivered at post-graduate courses held during the autumn at the London teaching schools. Two more appear below. Mr. Tudor Edwards spoke at the London Hospital and Mr. Buxton at University College Hospital.

EMPYEMA *

(MR. TUDOR EDWARDS)

ACUTE empyema is a relatively common condition, although it is not seen quite so often in individual private practice as hospital experience would indicate. Four or five years ago I was called to a case of empyema by a London doctor with a large practice and he told me that it was the first he had had in about twenty-five years. It was significant that within the ensuing year he had two more.

I am convinced that the frequency of true pneumococcal lobar pneumonia is less than it was in pre-war days, whereas the incidence of broncho-pneumonia is relatively greater. As the types of empyemata following these two pulmonary conditions are very different this fact is of considerable importance. Apart from these causes infected pleural effusions may occur, with apparent suddenness, accompanied by acute pleural pain, in cases where there has been no precedent *clinical* lung lesion, and it is possible that these are due to one or more minute subpleural abscesses which have arisen from inhalation of infected material from the upper air-passages—sinuses, tonsils, or teeth. This view is supported by the fact that they are often fœtid and contain anaerobic organisms. The rupture of a well-formed pulmonary abscess may suddenly flood the pleural cavity with its infected contents; or when the lung is adherent over the abscess a localised empyema can develop which may, or may not, communicate with the intrapulmonary abscess.

From this rather diffuse description you may visualise three types:

(1) Following *lobar pneumonia* and shown by rise of temperature, &c., after the crisis. This is pneumococcal and localised by pleural adhesions, however large the empyema may be. It is always purulent and usually contains masses of fibrin.

(2) Associated with *broncho-pneumonia;* often arising during the continuance of the active infection in the lung; more easily missed unless looked for; not localised in the pleura by adhesions; usually serous in the early stages. The common organism here is the streptococcus, hæmolytic or non-hæmolytic.

(3) *Fœtid pleural effusions*, may be associated with abscess or bronchiectasis in the lung, but sometimes starting, without previous history, with acute pleural pain. A generalised effusion without limiting adhesions; rapid pulse and considerable pyrexia. Offensive serous fluid found on aspiration, which on ordinary culture may be reported sterile or contain streptococci but will show a growth anaerobic on culture and sometimes contains spirochætes.

In the first group, where adhesions limit the boundaries of the purulent collection, we have, however large it may be, an abscess of the pleural cavity—i.e., a true empyema. Open drainage of such an abscess would have no gross effect on the physiology of respiration. When it is very large indeed it is as well to aspirate once or twice in order to decompress slowly and cause less disturbance as the mediastinal structures return to their normal position. Failure to obtain more than a few ounces of pus from a pneumococcal empyema is no evidence that it is a small one, for it is common for fibrinous masses to block the aspirating needle.

In the second and third groups conditions are entirely different. Here adhesion-formation is late and it is not uncommon to find the whole pleural cavity filled with infected fluid. Free drainage will result in complete collapse of the lung, considerable mediastinal movement on respiration—interfering with the venous return to the heart—and "pendulum respiration" in which the normal lung on inspiration takes some of its air from the lung of the affected side, which increases anoxæmia. Where a patient's vitality is already lowered by toxæmia, possibly a persistent lung infection and certainly a toxic myocarditis, these factors are only too likely to be fatal.

Thus treatment must be varied according to clinical history, clinical findings, and pathological investigations. From this it can be inferred that infected pleural effusions never call for urgent drainage. The more serious the condition of the patient the less urgent is drainage. Temporary relief can always be attained by aspiration with a needle and syringe.

Finally, therefore, treatment should be determined by the results of aspiration. If serous or seropurulent fluid is withdrawn it is dangerous to perform rib-resection and repeated aspiration should be relied upon as a temporary measure. The fluid will gradually thicken by increase in number of the pus cells, and when frank pus is obtained rib-resection should always be done if chronicity is to be avoided. As a test of the development of pus it is useful to fill a test-tube with the fluid withdrawn at each aspiration and to keep it vertical. The pus will sediment to the bottom of the tube and you will have a visual record of the changes taking place in the pleura. Operation can be safely undertaken when three-quarters of the tube consists of pus after 24 hours' standing, for it is known by experience that adhesions will then be present shutting off the mediastinal area of the pleura.

It sometimes requires moral courage to persevere with aspiration when a patient is seriously ill and when it appears that more adequate drainage might lead to a fall of temperature and general improvement; but many more patients die from too early than from too late drainage. Prontosil is of considerable value where hæmolytic streptococci are present.

When the fluid withdrawn is thin and offensive it indicates, as I have said, the presence of anaerobic organisms, with or without streptococci. The same principles apply as to the last group, but with repeated aspiration there is a tendency for a virulent and sometimes gangrenous infection to spread in the tissues of the chest wall. In order to prevent this, I advise that a vertical incision about 3 inches long should be made in the chest wall over the area where aspiration has been first performed; this is deepened until two ribs and the intercostal muscles between are exposed; the aspiration is now completed with a needle through the interspace, and the whole wound

* The complete lecture, on Thoracic Surgery from the Point of View of the General Practitioner, will appear in the *London Hospital Gazette.*

is packed with waxed gauze. This procedure is quite painless with local anæsthesia. The gauze pack is removed before, and replaced after, each subsequent aspiration. It will be found that a good barrier of granulation tissue lines the wound in a few days and thereby prevents any spreading infection in the chest wall. When the fluid has become purulent, as in the streptococcal cases, rib-resection and drainage is carried out. For the pneumococcal infections rib-resection can be carried out forthwith, unless there is a very large volume of pus, when one or two aspirations may be advisable. Local anæsthesia, preceded by morphia, or omnopon and scopolamine, is very satisfactory. Only about 1 inch of rib need be resected and drainage is instituted. Personally I favour under-water drainage for several reasons. It assists expansion of the lung, it very much diminishes the frequency of the dressings—i.e., it is economical as regards the expense of dressings—and, perhaps more important, it conserves the patient's energies and limits the pain associated with that process.

Irrigation, as long as there is a free outlet for the irrigating fluid and no bronchial fistula, is perfectly safe, Carrel-Dakin solution being excellent as a chemical decorticant of a mild nature. Lastly, pulmonary exercises—especially those directed to the use of the abdominal and lower chest muscles—are very valuable, but I am not impressed by the value of the usual "blowing" exercises. Good judgment is required as to when the tube should be removed. This is certainly not when the discharge becomes serous, but only when the pleural surfaces are in complete apposition and the cavity obliterated. If this was always insisted upon we should see far fewer chronic empyemata.

Chronic empyema is generally due to inadequate treatment of the acute type or to delayed diagnosis.

Diagnosis, unless an external sinus is present, is not always easy but radiological examination is very useful. In those with an external fistula lipiodol may be introduced into the track and the extent of the cavity demarcated. A less easy group to diagnose is that in which the empyema has broken through into the lung and is being continuously expectorated, for it is frequently confused with bronchiectasis.

Treatment, as in the acute variety, should include adequate drainage, irrigation, negative-pressure drainage, and respiratory exercises. Until the size of the cavity has become stationary for several weeks no further major operative measure is indicated. There is a great tendency to carry out haphazard rib-resections for chronic empyemata, without any clear idea of what will result and even what the surgeon has in view himself. Each case has got to be reviewed and considered individually, and even with the most extensive chronic empyema, where plastic procedures are required, success should be achieved—if necessary with the aid of blood transfusion. Indeed, death from an uncomplicated case must be attributed to poor judgment on the part of the surgeon.

It is therefore impossible to discuss the surgical treatment—except to condemn the extensive procedure, known as Schede's operation, which is still found in text-books on operative surgery.

NEW CLINIC AT HAYWARDS HEATH.—A maternity and child welfare clinic, built by the East Sussex county council, has been opened at Haywards Heath. The infant mortality in this part of the county last year was the lowest ever recorded, being 37·21 per 1000 as against 86·07 in 1915.

HÆMORRHAGE AFTER EXTRACTION OF TEETH

(MR. J. L. DUDLEY BUXTON)

OF the many and varied conditions that the medical practitioner has to deal with, post-extraction hæmorrhage may waste more of his time than anything else. He dare not say he will call in later on; for although most of these hæmorrhages are trivial enough there are times when they may assume a serious aspect. So he goes at once and it may be an hour or more before he is satisfied that a recurrence will not take place.

Hæmorrhage after the extraction of teeth may be due to either general or local conditions, which may be tabulated as follows:—

General

(*a*) High blood pressure, from a systemic disease.
(*b*) ,, ,, ,, brought about by alcohol.
(*c*) ,, ,, ,, due to panic.
(*d*) Blood diseases (anæmias, septicæmia, &c.).
(*e*) Hæmophilia.

Local

(*a*) Laceration of the gum.
(*b*) A retained root.
(*c*) Sepsis.
(*d*) Bad operating.
(*e*) Local anæsthetics.

Of the general conditions little need be said, for most of the patients suffering from conditions likely to cause abnormal bleeding would be under strict observation in hospital. Nevertheless there are one or two remarks that may be made about them.

GENERAL CAUSES

(*a*) *High blood pressure* due to systemic disease is so common in those past middle age that often a patient suffering from arterio-sclerosis will not seek the advice of his medical adviser before having several teeth removed. Should a hæmorrhage occur the doctor may have some difficulty in stopping it unless he has seen the patient recently and knows all about the general condition. The same is true of abnormally high blood pressure from any cause; yet unless the general condition is diagnosed at once, treatment of the local condition alone must result in failure.

(*b*) There are some patients who believe that a little *brandy*, taken internally, helps to harden the gums. I am not in a position to disprove this, but there is no doubt that alcohol brings about abnormal bleeding, and its use should therefore be discouraged after teeth have been removed.

(*c*) *Panic* is a very difficult condition to deal with; moreover it is so commonly seen that one might almost say that if a patient has bled for more than half an hour there will be a panic-complex to contend with as well as the hæmorrhage. If patients would only realise that half or more than half the liquid spat out is saliva, and that if a wound is sucked of course it will bleed, there would be less anxiety.

(*d*) *Blood diseases.*—Apart from chlorosis the other conditions under this heading do not come within my province. Chlorosis in young women is a most difficult complication, and since often it is not treated before the patient seeks aid for hæmorrhage she may have to be admitted to hospital.

(*e*) *Hæmophilia*—that disease so dreaded in the royal families of European countries, and responsible for the death of many—cannot yet be cured; but its sting has to a very great extent been removed. No longer do we find patients bleeding

to death from a small abrasion of the skin. Nevertheless great care is required when dealing with such a case. It is very rare to find a patient who does not know that he is a sufferer. Usually very early in life it is found that the child bleeds abnormally upon any slight abrasion of the skin, and therefore before any operation is performed, however slight, the parents have been warned always to tell the doctor. Sometimes these subjects bleed for a couple of days and then stop bleeding; others bleed longer, but each period in the individual appears to be the same. When the extraction of teeth is necessary it has been found that if 250 c.cm. of blood is given from a donor some hours before the operation a severe hæmorrhage will rarely take place. In certain circumstances it may be found necessary to give a further transfusion and if the patient has lost a good deal of blood then 500 c.cm. can be given. The question is sometimes asked whether it is advisable to add 250 c.cm. to the blood of a patient who already has a normal blood count with 98 per cent. hæmoglobin; the answer to this is that if there is any anxiety as to overloading the body then say 250 c.cm. can be withdrawn first. No warning from the patient should ever be ignored, for too much care rarely kills a patient, whereas ignoring a warning may bring about dire calamity.

There was a case reported of a man aged 35, who was said to suffer from hæmophilia. He was examined and found to be fairly normal physically; the blood count was slightly below normal, being 4,100,000 red cells per c.mm.; the hæmoglobin was 95 per cent. The clotting-time was given as 2 min. 40 sec. Two upper premolars were extracted and in ten minutes the bleeding stopped except for a little oozing. Within twenty-four hours a severe hæmorrhage started, and instead of a transfusion of blood being given a diathermy needle was inserted into the sockets until coagulation took place. A further hæmorrhage occurred two days later, and this so reduced the liquor sanguinis that the patient was given 500 c.cm. of blood. The hæmorrhage stopped soon after the transfusion, and it was not for five days that anything abnormal took place; then another severe hæmorrhage started, which again was controlled with a transfusion. The patient was in hospital for two months, and during that time I believe he had no fewer than ten doses of 500 c.cm. of blood. Finally when discharged from hospital he was able to walk out apparently fit for work.

The sequel to this story comes three months later when a letter was received from the patient enclosing a piece of alveolus which he said had come away from his jaw, but without causing any bleeding afterwards. The bone was clearly a sequestrum due to the diathermy, measuring over an inch long and half an inch high.

In Central Europe I believe that before any operation is performed upon a hæmophiliac a small scratch is made and allowed to bleed, the scratch being so small that the amount of blood lost is not likely to embarrass the patient even should he bleed for four days; meanwhile he is given much fluid by mouth and some form of calcium. As soon as the bleeding ceases the operation is proceeded with, and we are told that the subsequent hæmorrhage is not serious. This appears rational, but in this country it would require a super-coroner to explain to the relations, if need be, that everything possible had been done for the patient.

LOCAL CAUSES

Local conditions are far more often the cause of bleeding after removal of a tooth.

(*a*) In the first place it will be obvious that *laceration of the gum* will be responsible for the greatest number of cases because the patient feels a tag with the tongue and will not leave it alone. The tongue continually keeps the wound open and tears away the clot as soon as it is formed.

(*b*) A *retained root* prevents the tissues from falling in and so the bleeding continues.

(*c*) *Sepsis.*—It is a remarkable fact that patients who have tartar around teeth tend to bleed more after the extraction than those who have been scaled; and again a dirty mouth may be responsible for secondary hæmorrhage.

(*d*) By *bad operating* one refers to the operator who uses the wrong type of forceps, takes more than the tooth, or does not know that sharp forceps are essential if one would extract a tooth neatly and without subsequent pain and sepsis supervening. Above all he may be careless and may nip the floor of the mouth or even the tongue before he has got a grip of the tooth; in fact he draws the tooth and does not dislocate it.

(*e*) Occasionally a *local anæsthetic* may be the cause of post-extraction hæmorrhage, the probable reason being that the fluid injected has been forced under the periosteum, and hæmorrhage takes place from the bone surrounding the socket. In these days the peridental injection is seldom employed except by the old-fashioned dental surgeon who has not moved with the times, for block analgesia and submucous injections carry no possible risk of hæmorrhage.

TREATMENT

How should post-extraction bleeding be treated? In every case find the cause before you try to stop the bleeding. Where a general condition is suspected temporary measures to reduce the flow should be taken before searching for the real cause.

Sit the patient upright, but make the position as comfortable as possible. The patient is very susceptible to his surroundings, and above all you must relieve his mind as to the ultimate result of your labours. Once you have his confidence then his panic will be lessened, the blood pressure will fall, and this will perhaps save you half an hour.

Syringe out the mouth with sterile water—in London one might say tap-water—so as to get rid of all blood clot, and examine the wound to see where the bleeding is coming from. Any tags of lacerated gum should be snipped off with a pair of pointed scissors; this will often stop the bleeding almost at once. Any tiny vessel may be pinched with fine forceps. Roots which have been left behind should whenever possible be removed, but if this is not feasible a pad of gauze placed upon the part with a bandage to bite upon will probably stop the bleeding.

Plugging the actual socket is not to be advised, for when the plug is removed the wound recommences to bleed; or, if it does not, in nine cases out of ten the socket becomes septic, giving the patient five days of severe pain. There is however one condition in which a plug may be permitted, and that is the rare occasion when the patient is suffering from arterio-sclerosis and the apical artery does not close owing to its lack of elasticity. This state is easily recognised by the intermittent spurts of blood coming from the bottom of the socket. Two inches of plugging soaked in acriflavine to which paraffin has been added should be packed into the socket and allowed to remain for two days, by which time thrombosis should have taken place and there will be no further hæmorrhage.

When there is no doubt about the cause of the hæmorrhage, and it is a local condition—then there is a method of dealing with bleeding from a socket which I have never known to fail. Having cleared away the clot, take a piece of cotton-wool, moisten it, squeeze

the excess of moisture out, and spread a layer of Ferropyrin over it. Place this wool in position over the bleeding spot, hold it there with another mass of wool upon which the patient can bite, and leave it for a few minutes. This dressing may have to be applied again, but more often than not the first application will suffice. Ferropyrin is a chemical combination of antipyrin and liq. ferri perchlor., and as a hæmostatic it has in my opinion no equal. I have not found Russell's viper venom nearly so successful.

There are a number of drugs which have a vogue—various oils such as oil of turpentine, or again peroxide of hydrogen. This latter is to my mind of little use; it bubbles furiously and tends to dissolve what little clot may have formed. Now we come to adrenaline. I know that it appears to act like a charm, but the results are terrible. Adrenaline acts by causing constriction of the vessels, for the time being; then later on, when its effects are wearing off, there is a dilatation and the bleeding starts all over again. But this is not the real reason why I condemn adrenaline as a hæmostatic in post-extraction hæmorrhage. I do so because the socket invariably becomes septic, probably because the drug is so unstable that it is somewhat difficult to sterilise it.

Various remedies of the horse-serum variety are said to stop dental hæmorrhage instantly. These have been tried at the Dental Hospital, but it has been found that they do little to help the local condition, and some are apt to embarrass the patient by causing an anaphylactic reaction. The average case of bleeding due to laceration of the gum cannot be treated better than by having the gum trimmed up and an application of ferropyrin held firmly upon the wound. When the condition is more serious and the patient has been admitted to hospital a full dose of morphia will be advisable; but the patient must be placed in a semi-reclining position, never lying prone. As soon as possible he should be blood-grouped so that in the event of a blood transfusion being required there will be no unnecessary waste of time. Usually this will not be required, but there is always the chance and it must not be neglected. As soon as the morphia starts to take effect the bleeding will lessen, because of the lowering of the blood pressure and relief of anxiety. Then with the suitable local application a satisfactory result will be obtained.

There are times when a suture through the wound is efficacious; but unless the sharp edges of the alveolus are removed and smoothed over there will not be very much tissue to take a suture. The edges of the gum are very friable and the stitch will cut through. If, however, it is possible to sew up the wound black silk is excellent, a thick black silk can be seen without difficulty, and so there is no risk of leaving morsels behind which will only attract food and sepsis. And finally a good mouth-wash is essential psychologically as well as socially. Carbolic is time-honoured, but more than 1 per cent. will attack the oral mucosa, and do little good as an antiseptic. One of the best mouth-washes for everyday use as well as in the condition mentioned is the following:

℞

Zinci sulphatis	
Zinci chloridi	.. aa gr. v.
Acid. hydrochlor. dil.	.. ℥v.
Sp. chlorof.	.. ℥x.
Aq. menth. pip...	.. ad ℥ss.

Sig. A few drops in water as a mouth-wash.

SPECIAL ARTICLES

PAY-BEDS IN MANCHESTER

ON Nov. 15th Lord DAWSON opened the new paying patients' block of the Manchester Royal Infirmary, which has recently been erected on a site adjoining the parent hospital at a cost of £100,000. It is a four-storied building designed to accommodate 100 beds.

Lord Dawson explained to a large audience, over which Lord Derby presided, how the need for hospitals for private patients had arisen. With the progress of knowledge, he said, the art of medicine had come to require more technical equipment than in the past; at its disposal was an increasing array of sciences such as bacteriology, radiology, and biochemistry, which could only be used economically and efficiently if the equipment needed for their service could be housed in one building. Thus it was that in the future institutional treatment would become more and more necessary for serious illness, not only from the point of view of cost but in order that the most efficient treatment could be provided by a team of workers. For example, in 1910 radiological equipment for a hospital with 500 beds could have been provided for £500; it would now cost nearer £10,000. It was thus necessary to gather the people round the equipment rather than to carry the equipment to the people. The hospital would treat not only cases of developed and severe illness but would play a part in preventive medicine. Functional disorders, distempers, and distresses of body and mind—often very difficult to unravel, especially in middle age—were often best treated in institutions conducted on the lines of a convalescent home situated (say) ten miles outside the borders of a city; here a régime could be enforced, right dietaries could be devised, games and recreation, remedial exercises, and diversion could be provided; and some patients could with advantage live there while continuing their work. Such an institution near Manchester would be an admirable complement to the building now to be opened.

THE TWO ASPECTS OF MEDICINE

Lord Dawson went on to review the development of the public health services of the country, including the municipal hospital services, during the present century; these were mostly administered by whole-time doctors, and there were thus in the community two groups of doctors—a smaller group running these enlarging municipal services, and a larger group, practitioners amongst the people. Moreover, besides two groups of doctors working on increasingly divergent lines, we had two groups of hospitals, duplicating and even conflicting, without any machinery laid down for coördinating their activities. Manchester had gone far to rectify these defects, largely owing to the initiative of its medical officer of health, Dr. Veitch Clark, whose appointment on the staff of the Royal Infirmary provided a valuable link between his department and the leading hospital of the district. There was now in Manchester a Joint Hospitals Board, to coördinate all the hospital services. Lord Dawson expressed the hope that in the not distant future the health services will in large measure be staffed by general practitioners on a part-time basis, working scheduled hours; for it was useless to expect doctors to take an interest in medical services in which they could not take a

responsible share. He suggested that by efficient planning the best medical brains of a community should as a matter of habit be brought to the service of the medical officer of health, and the lay health authority whom he advised. If, for instance, an epidemic of typhoid ravaged a community, the doctors of the district should through their representatives confer and unite in the efforts of the medical officer of health for its conquest. There was no such fixed practice throughout the country, and in fact, the doctors might have little part in these emergencies. Preventive and curative medicine could not be separated on any sound principle, and in any scheme of medical services should be brought together in close coördination.

Prof. J. S. B. Stopford, vice-chancellor of the University of Manchester, proposing a vote of thanks to Lord Dawson, surveyed the major developments at the Infirmary in recent years, which he attributed to the enterprise, the progressive policy, and the courage of its board. Prof. John Morley, seconding, said that he did not decry the old nursing-homes—Manchester had had some very good ones. But the fact remained that modern surgery and much of modern medicine could not obtain what it required within the limits of the adapted Victorian villa.

MEDICINE AND THE LAW

Trouble about a Drainage-tube

Mr. Justice Tucker decided last week an important case of alleged professional negligence (Morris *v.* Winsbury-White) to which reference is made in a leading article on another page. The operation was prostatectomy. The main facts, which were not seriously in dispute, may be briefly stated. On Nov. 27th, 1933, the preliminary operation was performed at St. Paul's Hospital, Endell-street; the major operation followed on Dec. 18th. The patient was discharged on Feb. 10th, 1934, but complained that, immediately after his leaving hospital, both the front wound and the perineum were leaking and there was trouble from the bladder and from piles. He revisited the hospital on March 28th for examination, when a sound was passed. On April 11th he was sent back again by his medical attendant. The surgeon then directed the taking of an X ray photograph. This indicated the presence of a tube partly in the perineum and partly in the bladder. An operation was at once performed for removal of the tube which was found to be in the bladder. Mr. Morris claimed damages for negligence with the result set forth in the judgment.

JUDGMENT

In giving judgment Mr. Justice Tucker said that Mr. Morris had been at the time of the acts in question a man of normal health, but not very good health. The issues in the case were: Was there a special contract which imposed on the surgeon a higher obligation and responsibility than usual; and, if not, what was the duty owed to the patient by a specialist surgeon in a case of this kind? and did the evidence disclose failure to perform that duty? The negligence which had been alleged against Mr. Winsbury-White fell under six headings:—

(1) He left a tube in the patient at the preliminary operation of Nov. 27th, 1933.

(2) Alternatively, he left a tube in at the main operation performed on Dec. 18th.

(3) A tube got into the patient between Nov. 27th and Dec. 18th in circumstances which made the surgeon liable—i.e., either by the act of other persons for whom he was responsible in law in the circumstances, or through his own negligent failure to ascertain what had happened.

(4) Alternatively the tube got in between Dec. 18th, and Feb. 10th, 1934, also in circumstances which rendered the surgeon liable.

(5) He was negligent in allowing the patient to be discharged on Feb. 10th, a date when he should have realised that there was something seriously amiss with him; and in any case the plaintiff was not in a fit state to be discharged on that date.

(6) He was negligent on March 28th in not having radiograms taken.

Counsel for Mr. Winsbury-White had submitted that on a strict view of the pleadings some of these allegations were not open to the plaintiff. His lordship considered, however, taking a broad view of the pleadings, that they covered the 1st, 2nd, 5th, and 6th of these allegations. These matters were inevitably and inextricably mixed up with the evidence; the defendant and his witnesses had always known of them and that they were bound to be raised. The pleadings, however, did not cover the other two allegations: that the tube had somehow got into the plaintiff between Nov. 27th, 1933, and Dec. 18th, or between Dec. 18th and Feb. 10th, 1934, through the act of some other person for whom the defendant was responsible in law as his servant or agent. If the plaintiff had intended to allege that Mr. Winsbury-White was responsible for all or some of the acts of the nurses or medical staff of St. Paul's Hospital, he should have stated with particularity not only the names of the persons whom he alleged were the surgeon's agents, but the specific acts of negligence for which he contended that the surgeon should be held liable. Even, however, if the pleadings had been sufficient in these respects, and if he were wrong in thinking that they were not sufficient, the learned judge was none the less satisfied that the plaintiff could not maintain those allegations. It was well established in law that the resident medical officers and nursing staff of a hospital like St. Paul's were not the agents of a specialist surgeon who came in to perform an operation of this kind—at any rate in so far as they were performing the ordinary routine duties which had to be carried out in the hospital. The very reason for the patient entering a hospital of this kind was inherent in the arrangement which he made with the specialist that he would go somewhere where he would receive attention from the resident medical officers and nurses. No authority had been cited to his lordship for the proposition that ordinarily speaking (apart from any special contract) a surgeon was responsible for the routine acts of the resident medical officers or the nursing staff.

Counsel for the plaintiff had distinguished between such an act as burning a patient with a hot-water bottle and leaving a tube in his body, which latter act, he said, was different from mere routine attention. His lordship could not accept this view. The removal and replacement of the tube, its changing and shortening as the patient convalesced, was a necessary and ordinary routine hospital process with which the resident medical officers were not only qualified to deal, but it was their function and duty to deal. It was unthinkable that the surgeon who performed the operation should have to attend at the hospital every time such a tube was shortened, or, still more, taken out and reinserted. As it was not his duty to attend personally on those occasions, he was not, as a matter

of law, responsible for any negligence in the performance of these routine duties.

Counsel for the plaintiff had treated the case as one in which the circumstances were such that negligence must be presumed unless the defendant could satisfy the court that he had not been negligent. The plaintiff, he had said, was at all material times unconscious and had not known what was going on, and was in the power of the defendant or of others for whom the defendant was responsible in law. His lordship did not agree that the circumstances of the present case put it into that class. If the whole controversy had turned on what had happened at the operations of Nov. 27th and Dec. 18th, the circumstances might have thrown that onus on the defendant. In the present case, however, the plaintiff alleged that the tube had got in at some time unknown between Nov. 27th and Feb. 10th, when he had been treated by numerous medical officers, sisters, and nurses and had not by any means been, except on a few occasions, in the control, charge or power of the defendant. The plaintiff, therefore, had a duty to show that Mr. Winsbury-White had been personally guilty of an act of negligence.

The learned judge then dealt with the allegations that the patient had been kept waiting on March 28th and April 11th, and said he was satisfied that this was entirely due to the ordinary rush of a busy man working at a hospital, coupled perhaps with some misunderstanding of the precise time of the appointment. He was also satisfied that the operations which had been performed at the Royal Northern Hospital in December, 1933, and January, 1934, for piles and rectal abscess had no connexion with the presence of the tube which had been found in the spring of 1934. He was also convinced from the evidence of Mr. Everidge and Mr. Swan that the plaintiff was not now suffering from a recto-vesical fistula and that Dr. Dawson was mistaken in saying that he was. The leakage which had surprised Dr. Dawson had come from a perineal fistula.

NO SPECIAL CONTRACT

His lordship then turned to what he described as the real issues of the case. The first was, he said, whether there had been a special contract. The argument that there had been a special contract rested entirely on the evidence that Mr. Winsbury-White had advised Mr. Morris to go into St. Paul's Hospital rather than another hospital because he would there be able to see him three times a week and more often if necessary, and would give him his personal attention until he was fit to return home. These passages explained the great emphasis that had been laid on the phrase "personal attention." The defendant had said later in evidence that he did not think he had pledged himself in terms to give this case his personal attention, but had added that this, in his view, made very little difference to his actual obligations, which were to perform the necessary operations and give the necessary supervision thereafter until discharge. Whether this was called a special contract or not was immaterial, because any undertaking that the surgeon might have given contained nothing more than the ordinary obligation which lay upon any surgeon who performed an operation of this kind. This was a normal, ordinary case in which the surgeon was obliged to pay such visits as were necessary after the operation to see how the patient was progressing under the care of the medical and nursing staff of the hospital. Mr. Winsbury-White had, in fact, paid three visits or more a week and had personally performed the operations, and had owed no further duty than he had performed, contract or no contract and apart from the question of whether he had been personally negligent.

A REASONABLE EXPLANATION

Turning to the question of how the tube had got into the patient, the learned judge dismissed as quite impossible the suggestion that the tube which had been found in the patient's bladder had been a prevesical tube. It must, therefore, have been a perineal tube, and not necessarily that which had originally been inserted on Dec. 18th. He accepted the theory put forward by Mr. Everidge and Mr. Swan. They both agreed that this was a most remarkable and exceptional case, for no one had ever heard of a piece of tube being found in a patient's bladder after an operation of this kind, and their theory was the only one which in any way explained the unusual facts. When a perineal tube was first put in it was held by one stitch, which lasted about three weeks. When the stitch was removed a safety-pin was substituted, not attached to anything but the tube, merely to stop it from disappearing into the wound. These witnesses suggested that somehow or other, when the tube was changed, someone must have forgotten to attach the safety-pin or have failed to see that it was absent. Its absence, coupled with the natural suction of the bladder, would account for the entry of the tube after the sutures had been absorbed. Moreover, if a tube slipped into the opening so that no part of it projected, a nurse or medical officer would think it had fallen out and insert another one, thus forcing the first tube still further into the bladder. This was not his lordship's theory, and it was not part of his duty to evolve one, but on the evidence it seemed to be the only possible theory to entertain.

The tube must have got in either at the operation on Dec. 18th or during the patient's convalescence. At the operation, however, the surgeon did not put in a tube until the surgery was over and the bladder had been stitched to the urethra. It was inconceivable that any piece of tube could possibly have got in during that operation. Moreover, on Dec. 23rd, Mr. Winsbury-White had personally cut the stitch by which the original tube had been held in position and had substituted a safety-pin. No tube could possibly, therefore, have got in before that date.

It was further alleged that Mr. Winsbury-White ought not to have discharged the patient on Feb. 10th. A considerable degree of leakage was quite usual after an operation of this kind, and it was a clear fact that the perineal wound had dried off eight days before the day of discharge. No one could say it was negligent of the surgeon to allow the patient to be discharged when the wound had dried. It was also alleged that he ought to have ordered an X ray picture from what he knew on March 28th. This part of the case had, the learned judge said, given him much difficulty, but he was satisfied after a study of the evidence of Mr. Morris, Dr. Dawson, and Mr. Winsbury-White that on that date the patient had not complained to the surgeon of pain, and the surgeon had not been informed of any complaint. He had passed a sound and found no obstruction and no recto-vesical fistula. The patient had passed water with little discomfort, and the surgeon had concluded that there was some cystitis which would clear up in due course. In these circumstances, therefore, the action failed and there was no foundation of truth in the suggestion that at any stage of the proceedings Mr. Winsbury-White had failed in his duty to the plaintiff.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

NATURAL CHEMICAL STIMULATORS

DELIVERING the second Sharpey-Schafer lecture in Edinburgh Sir Henry Dale, F.R.S., recalled that in 1894 Sir Edward Schäfer discovered, in collaboration with Dr. Oliver, the action of suprarenal extract on the blood pressure—a starting-point of new investigation. In 1906 Reid Hunt discovered the depressant action of acetylcholine, which was isolated from ergot eight years later but not from the animal body until 1929. Acetylcholine has a double action—an intense parasympathetic action on plain muscle and a nicotine-like effect on ganglia. In 1921 the classical frog-heart perfusion experiments of Otto Loewi proved beyond all doubt the theories of years before. He showed that the perfusion fluid from a heart inhibited by vagal stimulation would inhibit another normal heart, and that the application of atropine to a heart apparently paralyses the vagus by preventing the action of acetylcholine. Similarly the release of adrenaline on sympathetic stimulation has been proved conclusively, in Sir Henry's opinion, although this has not been accepted by some other workers. The evanescence of acetylcholine's activity is due to its conversion by choline esterase into acetic acid and choline. Physostigmine damps down the activity of choline esterase, thus protecting acetylcholine and intensifying parasympathetic action. The apparent anomaly of adrenaline's failure to stimulate sweat glands, although they are innervated by sympathetic fibres, is explained by the fact that these fibres are anatomically sympathetic but physiologically parasympathetic, releasing acetylcholine when stimulated. Instead of adopting an anatomical classification, it is, therefore, more useful to divide the autonomic system according to its chemical function, and to use the terms *cholinergic* and *adrenergic*.

The nicotine-like action of acetylcholine on ganglia has now been proved experimentally to be of great physiological importance. The substance has been isolated from ganglia in relatively large quantities, and has been shown to be responsible for carrying the nerve impulse over the synapse between preganglionic and postganglionic fibres. The suprarenal medullary cells, which are analogous to ganglia cells, are directly stimulated to produce adrenaline by acetylcholine if a splanchnic nerve is electrically stimulated. Acetycholine has been extracted by perfusion of a muscle, whose nerve has been stimulated, even after being paralysed by curare, and when injected into a skeletal muscle has caused contraction. The chemical function of each neurone is unchangeable, being either cholinergic or adrenergic. In conclusion, Sir Henry indicated the wide scope for work on the chemical functions of the *afferent* nervous system.

THE PLEURA AND PLEURAL PAIN

For the fourth Honyman Gillespie lecture Dr. A. Fergus Hewat took as his title Some Anatomical Facts relative to Respiratory Diseases. After referring to the lymphatic system in the neck, he pointed out that septa dip into the lung from the pleura, and that these form pyramid-like lobes each of which contains 50–250 anatomical units of lung tissue. At the point where the venous lymphatics communicate with the pleural lymphatics there are valves pointing towards the pleura. Pleural diseases do not, therefore, spread readily into the lung tissue and pleurisy may be the only indication of tuberculous infection of the lung. Obstruction of the deep lymphatics in intrapulmonary disease may also cause spread of disease to the pleura.

After discussing the diagnostic difficulties of extrathoracic pain in acute pulmonary diseases, Dr. Hewat said that the accepted theory of causation of pleural pain—friction of the roughened pleural surfaces—has been questioned by Bray, who pointed out that the area of friction and of pain do not always correspond. Pain may be present without friction and vice versa. Further, if caused by friction, the pain, like the friction, should be of equal intensity on inspiration and expiration, whereas pain is usually severe on inspiration and absent on expiration, and when the breath is held in full inspiration maximal pain is often felt. Dr. Bray therefore attributes the pain to tension or stretching of the inflamed parietal pleura. The sudden pain in spontaneous pneumothorax may be due to rapid distension of the pleural cavity with air and consequent tension of the parietal pleura.

UNITED STATES OF AMERICA

(FROM OUR OWN CORRESPONDENT)

THE ELIXIR OF SULPHANILAMIDE DISASTER

UP to Oct. 29th there had been 59 well-substantiated deaths resulting apparently from the ingestion of Elixir of Sulfanilamide-Massengill. Most of these were in southern States but there was 1 death in Ohio and several in central Illinois. The first news of this serious situation came on Monday, Oct. 11th, with the report from Tulsa, Oklahoma, that there had been 6 deaths following the administration of this elixir—all having the common symptom of complete anuria. Since that time the number of deaths has continued to increase, and although the Federal Government has placed a large force of inspectors in the field and has traced almost all the 700 shipments of this drug from the manufacturer, the end is not yet definitely in sight. A full report from the American Medical Association laboratory appears in the official *Journal*. Analysis of samples indicate that the elixir is a mixture containing approximately 9 to 10 grammes of sulphanilamide dissolved in 100 c.cm. of a solution consisting of diethylene glycol (72 per cent. by volume) and water (15·6 per cent. by volume), with small amounts of saccharine, colouring matter, and reducing substances. Toxicity experiments were carried out by a group of workers at the University of Chicago with the original elixir, pure diethylene glycol, pure sulphanilamide, and a "synthetic" elixir compounded in the same proportion as that found in the original. The published results apparently warrant the belief that diethylene glycol is the toxic agent in the mixture examined, since experimental animals given pure diethylene glycol exhibit practically the same clinical signs and pathologic changes in kidney and liver as those treated with similar doses of the Massengill elixir or the "synthetic" elixir. The study of the pathologic anatomy reported by Dr. Paul Cannon of the University of Chicago indicated a close similarity in the pathologic picture between that following the ingestion of the Massengill elixir in man and that occurring in animals after toxic divided doses of the original elixir, diethylene glycol, or the "synthetic" elixir. These facts were quite definitely established, since the necropsy studies in persons who had died

were in most instances carefully carried out and accurate comparisons could be made.

Several important conclusions are possible. Diethylene glycol in the doses given as suggested for administration of the elixir was the causative agent in the deaths. Although it is not apparent that sulphanilamide had any appreciable part in the toxicity of this preparation, its concurrent administration with other substances, except sodium bicarbonate, should be carefully avoided until knowledge of the pharmacology on animals definitely proves the harmlessness of such combinations.

Finally, this tragic experience proves the inadequacy of the present Food and Drug Act, which was enacted in 1906. Under this Act there is no way of seriously punishing the pharmaceutical firm which placed this unstandardised, secret mixture on the market without adequate chemical or pharmacologic study, and the law provides no way of preventing a repetition of similar disasters. It is hoped in many quarters in this country that one result will be the immediate enactment of more satisfactory legislation.

NOTIFICATION OF SYPHILIS

While advocating the notification of syphilis you have recently remarked that "the case for notification of the venereal diseases is by no means so clear-cut as the case for notification of other transmissible diseases."[1] Those American epidemiologists whom I have consulted do not agree even with this reservation. Perhaps your readers would be interested to know how syphilis is notified in the city of Buffalo, N.Y., and what is done with the records. It is not disputed that the syphilis control programme in this city is in advance of the average city health administration in this country. A syphilis register is kept in the form of a card index containing the name of the patient and the case number. A second set of cards also containing this minimum information classifies the cases geographically so that at any given moment the cases in any given street can be promptly segregated. The syphilis register is kept up to date by reports from physicians and also by daily reports brought by messenger from the city laboratory of all cases positive for the Wassermann or dark field tests. Cases are also reported by the hospitals and by the city gaol. Potentially infectious and late cases with full case-records are filed in numerical order in a 5×8 case-card file. Early infectious cases are separately filed in a visible index in alphabetical order. The case cards are the same for all cases and are so designed (with name both at top and bottom of card) that they can be used either in a vertical or a visible file. Every early case is investigated. If a private case the investigation is made either by the private physician or by the health department with his consent. The investigation calls for a record, among other things, of all contacts by name and address and date or dates of contact. Information regarding the use of chemical or mechanical prophylaxis is also recorded. Contacts who have not already been investigated as "cases" are at once examined and kept under observation. A contact is not interviewed in the presence of a third person and the investigator is usually ignorant of the name of the informant. There is a file of contacts in a visible file on 5×8 cards. On all early case cards the month in which the case is reported is placed in the lower right-hand corner and the date when the completed investigation is sent to the State Department is placed in the lower left corner. A red tab is placed on the lower right corner of all cases reported within the month and a yellow tab with the investigator's initial is added at the lower left corner. There are files for cross-reference of prostitutes and of houses of prostitution. The married and maiden names of all hospital clinic prenatal cases are received periodically and checked with the syphilis register. Any pregnant woman who has or ever has had the disease is induced to submit to treatment regardless of the previous treatment record. With the permission of the patient all the information on her case card is given to her physician. The married and maiden names of mothers of stillborn and premature infants are checked with the syphilis register. If no record is found, attempts are made to secure a Wassermann test. The names of applicants for marriage licences are also checked against the syphilis register, so are the current death certificates. With the written consent of a prospective blood donor his name may be checked against the syphilis register and the result reported to the physician in charge of the transfusion.

Obviously all records are strictly confidential. There is a master lock in the room in which they are kept and no one other than members of the staff regularly employed may enter the room except when accompanied by the director, the supervising nurse, or the chief clerk. The following statement is signed by all employees:—

> Under no circumstances is any employee in the Syphilis Control Service to give any information to anyone regarding any Wassermann, Kahn, dark-field, or physical examination of any patient except by mail to the physician who submitted the specimen or reported the case. . . . All personal or telephone calls regarding records or reports shall be referred directly to the director. Any physician or public health employee requesting reports by telephone shall be informed that the information will be forwarded to them by mail.

This statement is also prominently posted in the department.

[1] *Lancet*, July 24th, 1937, p. 204.

THE LANCET 100 YEARS AGO

November 18th, 1837, p. 270.

From a leading article.

IN THE LANCET of November 4th we offered some strictures on the case of a man who perished in consequence of a penetrating wound of the abdomen, which he had received a few hours before his admission into hospital. . . . The accidental absence of the junior surgeon from home, at the time of being sent for, sufficiently excuses him in our eyes, . . . but, during the absence of that gentleman, have the other surgeons of the Hospital nothing to do with the "accidents" which may be brought in? Is it not their understood duty to attend, one for another, whenever any sudden emergency may demand the presence of a surgeon at the Hospital? or are we to imagine that the savour of Professor COOPER'S surgical knowledge is sufficient to sanctify his very wards, and that a patient once received within their walls has no further need of aid or attendance? On this principle, a man who has received a dangerous penetrating wound of the abdomen, if he have the good fortune to be carried to Professor COOPER'S wards, resembles the criminal who has taken refuge in a mosque; he is safe from all further bodily harm. Though the senior surgeon may not see him for twelve or fifteen hours, the junior surgeon "has nothing to do with the case." . . . Under the present mismanagement of our public medical charities, these establishments, instead of being receptacles for the relief of the indigent sick, are daily converted into places whence the departure of the poor from this life is rendered as rapid as possible.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index

FROM A SALARIED SURGEON

III

THE continental system of staffing hospitals is well known. At the top is the great chef de clinique followed by his devoted and slightly sycophantic disciples, all doomed to full-time appointments, and never reaching a position of real authority until the hair is turning grey. They are kept in intellectual subjection by the flashing eyes and the sharp command of the great man—who himself after many weary years of servitude, has at last tasted authority and will allow no one to sip of the cup until Time compels him to relinquish it.

* * *

This is the way it looks to our rugged individualists who dislike the professorial system. Milder critics admire many of its features, but see as its danger the undue influence of the man at the top. If that man is good—then his department will be good; if he is mediocre, his department will be likewise. If, as with us, the work is split up between a number of independent men and one of them is a second-rate fellow, the total harm done is minimised.

All this is true—but only up to a point. Extraordinary care should be, and usually is, taken to appoint a really good man as professor. In countries where this system is almost universal there is every prospect of getting the best; but where the professorial system is nothing more than a half-hearted experiment this may not be the case. It matters hardly what other fields of learning we consider, the professorial system is accepted without question. It happens that medicine in this country has not developed along these lines, as it has elsewhere, and that the most glittering prizes, in public recognition and financial reward, go to men in consulting practice. Nevertheless, the professors are coming into their own and it may not be very long before the university hospital, with its professorial chairs, dominates medicine. Neither is it difficult to adapt the professorial system to a community and its hospitals where there is no teaching centre. I shall refer to this again next week when we come to the question of municipal hospitals.

* * *

Although I believe that they exist, I have yet to visit a continental or American clinic where the domination of the chief blights the initiative of his juniors. It seems to me that the character of a professorial unit will be determined by national and individual traits. No doubt there would be tyranny here and there (I have known one British centre where it was painfully apparent), but our units have more of the camaraderie of the Americans than the monarchial despotism of the Germans. More often than not a professor allows his juniors an astonishing degree of freedom. Surgery to-day is such that no one, except those who still affect the general surgeon tradition, makes claim to omniscience, and the work has to be divided among men keen to advance their knowledge in the several fields that are rapidly assuming the proportions of prairies.

I once spent a year abroad working under a man who had justly earned the reputation of being a martinet. During my first few weeks I knew that I was the object of silent though not hostile observation. Then, suddenly, my length of rope, at first only a few inches, ran out to many yards. I came to regard my chief with affection as well as respect, and he came to have a certain trust in me. Other men from London have worked in this same clinic, and their experience has been the same as mine. Perhaps I should add that we were not working as visitors, but as paid members of the staff with exactly the same responsibilities as our native colleagues.

* * *

At eight o'clock in the morning the work began (this, I admit, was too early for my taste) and continued, with the usual intervals for meals and the odd cigarette, until about five in the afternoon. There was an immense amount to do, out-patients, ward-rounds, operations, lectures to students, demonstrations in surgical anatomy, and all the rest of it. But there was no need to keep one anxious eye on the clock, and there was time to think. In the course of the day's work there might be a meeting with the pathologist about a case of common interest, another with the neurologist, and a violent argument with a colleague on the diagnosis or treatment of something or other. And in order to keep up one's end in these contacts with equals or seniors, it was necessary to be well-informed; there was always present this external stimulus to acquire wisdom, even at times when the inner urge was becoming sluggish.

The elementary operative work soon came my way, then the more advanced things. This delighted me and the other juniors and relieved the senior man of what he had probably come to consider as time-consuming, fatiguing, repetitive work. In the performance of an operation there was the desire to satisfy one's seniors, one's amour propre, and the onlookers. Compare these conditions with those at the little hospital where the junior man in this country is struggling with his first goitre, sure of one thing only—that he ought not to be doing it: uncoördinated assistance and no helping hand or golden word of advice when an unexpected difficulty arises. These things ought not to be.

* * *

In the working of a great surgical unit it is possible to formulate policy in the treatment of difficult conditions—particularly malignant disease. While not forgetting that the treatment must be suited to the needs of the individual, it is essential that certain diseases should be dealt with in series of cases. Only in this way can opinions regarding the value of this or that form of treatment be based on facts. At one time it was stated that patients with cancer of the tongue at one of our teaching hospitals were being dealt with, in twos and threes, in about ten different ways—this came from a surgeon on the staff of that hospital. In the treatment of such a grave condition there is no room for dilettantes. A little careful planning should, within a relatively few years, enable one to say that a certain method is superior to all others, or, perhaps, that two methods give equally good results. Coördination of effort is possible, even under our system, but it is not easy and all too rare.

* * *

Some years ago, one of my seniors said, "You ought to get down to some original work; if you

don't do it now, you never will; you'll be much too busy later on when you are getting on in consulting work." It was well-meant advice, though I had actually started on a fairly strenuous investigation. I spent half the time finding out how to go about it, and the other half actually doing the work and trying to correct my earlier mistakes. The most important finding was one that benefited only myself, and it was that the simplest problem has to be tackled in an orderly fashion, and that possible sources of error should receive particular attention. I wasted endless time learning this. A few words of guidance from a senior, a plan of attack sketched on the back of an envelope would have given the enlightenment that I had so painfully to seek for myself. There is a place for benevolent paternalism in work of this kind. Life is too short for us to find out a priori the plans of attack on the numerous problems presented to us. A senior man can often tell immediately whether an investigation is properly planned or point out where the defects are. Some months ago two of the workers at the London School of Hygiene and Tropical Medicine saved me from setting out on a wild goose chase. Somehow, I associate invaluable help of this kind with the professor rather than with the consultant.

* * *

This help from above is manifested in other ways in countries where the professors flourish. The training and placing of junior men is guided to an extent unknown here. It need not be at all despotic, for the request to work under some other teacher often comes from the junior whose chief will then, if he thinks fit, approach the other man to find out if a place can be found. America will often take our junior men on such recommendations, but it is not so common to find us reciprocating.

When the question of a more senior appointment arises, the doors should be open to the best man in the country. It is encouraging to note that many hospitals, including Bart.'s, Guy's, Mary's, Middlesex, U.C.H., and many provincial hospitals are paying less attention to the old medical school tie. Yet we are still too tender-hearted towards the diligent but not too bright man on the spot—the faithful servant of the firm. Appointments are still made in which the heart of the committee rules its head. We sometimes hear that Jones is a "sitter" for a certain appointment: there is often unconscious irony in this, for Jones's chief claim to recognition is that he has been sitting patiently for so long, and no one likes to shoo away the poor broody bird. After all, a man's services are rendered not to a hospital but to Medicine, and it is on these grounds that his merit should be judged.

* * *

The financial insecurity of surgeons during their early years interferes with their getting the most out of foreign travel or opportunities for doing original work. There are two periods for going, but only one for working, abroad. The first is at the registrar stage when scholarships are obtainable. It is a glorious adventure, but most men go, of necessity, before they have had time to learn very much about the work being done at home in the particular branch of surgery that they are pursuing. The result is that they get too little and too much out of their year's work abroad. Too little because they are not sufficiently experienced to appreciate and assimilate all they see: and too much because their slender critical faculties are knocked out by the enthusiasm of the foreigner. Last year a German friend of mine was holding forth one day about the Great Professor ——'s (I suppose I must not give his name) wonderful treatment for spastic paralysis in children. I would go a long way to learn how to do something really effective for these poor little creatures, so I listened hard. After the first fifteen minutes of his eloquence, it dawned on me that he was talking about division of the obturator nerves ("but you must only divide so much—not all the nerve") and the tibial nerves —the well-worn and now rather démodé operation of Stoffel. When I asked how much of the obturator nerve and which part (if you can possibly tell), my lecturer suddenly fizzled out—he didn't know. And, of course, the operation has been tried in thousands of cases in this country, and I think we know something about it from our own experience. But eight years ago I could not have withstood such wunderbars —I should have given in completely.

During the long period when The Practice is growing and good appointments are in the market, one must not be away from home. This is the time when a man is sufficiently advanced to derive the greatest benefit from a sojourn abroad. So, too, with research work. I cannot see how any man can take up surgical research with real insight until his clinical experience is such that the thorns of unsolved problems have pricked him hard and deep. Then it is too late: he is bound hand and foot with clinical practice, and it is impossible for him to escape for six months to work forward from the shrewd clinical hunch that is often the first clue to the solution. With all my heart I admire those who in spite of pressing routine work manage to spend their evenings and week-ends ferreting out some small but not unimportant clinical-pathological problem. The youngster with no clinical background does his best, but it is often kinder not to ask him what has come out of his year's or two years' "research" work.

Later in life, there is time and money to travel. But by then the elasticity of youth has been replaced by the incipient ideo-sclerosis of advancing years, and the days for working abroad have gone for ever.

* * *

Last month A Genito-Urinary Surgeon expressed the hope that his sad discourses (which I, for one, enjoyed immensely) would be followed by those of a more hopeful prophet. I do not think I have been one whit more cheerful. I have railed against the conditions under which young surgeons (and physicians too) have to work in this country. Next week I shall utter my last and not less dismal howl. I have talked about the evils of a System, in much the same way that socialists cry out against the sins of capitalism. But, unlike them, I am not going to propound an undoubted solution for all the difficulties that I have named. Naturally I have a plan, though I'm not sure whether to call it a Five Year or Ten Year plan, however I am not going to tell you what it is. There are good reasons for this modest reticence. In the first place, I have changed it so many times during the last few years that there is a good prospect of my altering it again very shortly. Then I don't know what is going to happen to the voluntary hospitals—this has to do with the problem more than anything else. Lastly, and most important of all, there are indications that older and far wiser heads than mine are not unaware that our good old British system has its faults, and that efforts are being made to remedy them. One example will suffice: a number of towns have courageously undertaken to amalgamate their hospitals and this will go far to get rid of multiple and therefore time-wasting appointments.

CORRESPONDENCE

NATIONAL PHYSICAL TRAINING

To the Editor of THE LANCET

SIR,—In the account in your last issue (p. 1140) of a discussion on this subject Sir Joseph Barcroft is reported to have said that he merely desired to ask a few questions. It does not appear that he received any reply. Might the apostles of the gospel of "fitness" be asked to reply in your columns? When politics and propaganda combine questions are apt to be regarded as treasonable, but perhaps, Sir, in a medical journal a spirit of criticism may be allowed to survive without calling down too much calumny. Would the protagonists of more gymnastics (who now have designs on the leisure of the medical student) define "fitness"? Is it fitness for war against a human enemy or against disease? Is there evidence that the "fit" are less likely to contract pulmonary tuberculosis than the "unfit"? Are the men in the fighting services, who enjoy compulsory games under medical supervision, more resistant to disease than a corresponding age-group who take no exercise? Do life insurance companies find that those who have kept "fit" by regular exercise are better risks than those who have enjoyed a more sedentary existence?

Information on points such as these and many others might be considered before the medical profession is stampeded into giving its blessing to a scheme which may be desirable on political grounds and even on medical grounds, and questions like those of Sir Joseph Barcroft deserve an answer.

I am, Sir, yours faithfully,

CECIL FLEMMING.

Upper Wimpole-street, W., Nov. 15th.

POLITICS IN THE HOSPITAL

To the Editor of THE LANCET

SIR,—I, too, have read with interest your leading article of Oct. 9th. It is all to the good that medical students should concern themselves with public health in the widest sense, but one may be allowed to point out that many problems which have recently been given a political flavour are essentially technical problems. Their solution has often been hindered by the introduction of party feeling into their discussion.

In my view our medical students can best contribute to the well-being of the State by first learning to be good doctors. The academic atmosphere of a hospital or university is likely to produce academic politics, whereas, if those interested would reserve their considered opinions for the time when they have already held resident appointments, travelled, and read more, they would be more likely to be realistic. They would then be able to decide whether a man works better for a salary plus a pension than he might as a free lance. They would know whether it is agreeable to be employed by an authority controlled by politicians. They could possibly judge whether these politicians are as sensitive to the complaint of the voter-patient as they are loyal to the doctors who serve them. They might discover many doctors in public services who are sickened by the manœuvres of those set in authority over them. It might even occur to them that the doctor's ego is a potent healing agent and that any encroachment upon it reduces his power for good. They might decide whether a hospital authority should pay attention to anonymous letters. They might learn why André Siegfried wrote "England's Crisis."

Let us suppose that one of the elect tells us "it is the policy of my party to stamp out boils." Are we then to suppose that the other side are pro-boil? This sort of thing is as dishonest by insinuation as it is surgically unsound. In fact, taking public health in the widest sense, we may suggest that many emotional and intellectual disorders of the body politic are caused by political claptrap. An intelligent health authority would use a carbolic spray at many political meetings.

I am, Sir, yours faithfully,

Buxton, Nov. 9th. G. C. PETHER.

ASSESSMENT OF PSYCHIATRIC TREATMENT

To the Editor of THE LANCET

SIR,—I have read with deep interest the letter in which Dr. Mary Luff first raises the question whether there are two rival schools of thought in psychotherapeutic treatment, the one addicted to prolonged or "intensive," the other pinning its faith on shorter methods. She makes the suggestion that this deplorable divergence may be dependent upon the possibility that the adherents of these rival faiths tend only to see the failures achieved by the other faction; and invites me to join in the task of "constructive" reconciliation.

It would seem equally probable, however, that fallacies might arise owing to the possibility that the rival factions—if such there be—do not tend to see each other's successes. Taking as a theoretical illustration an institution dedicated solely to the method of prolonged treatment for any and every patient (there can be no institution of this kind, for surely we are not so ignorant and silly as all that), it would be easy to understand how workers in such an institution might tend to over-estimate the efficacy of, or necessity for, the method of prolonged treatment they employed; for if the patients they treated were comparable to the ones I saw at St. George's, certain of the good results that might be attributed by them to their prolonged method of treatment would have been obtained in patients who would have improved without it; but who would also (unless we were very cynical) have improved with it.

But in treating psychiatric patients, as Dr. Luff rightly points out, the issue is not that of prolonged versus shorter methods of psychotherapy. Nor do I believe should the issue be put forward as consisting solely in the correct choice between these alternative (or at least contrasted) methods. Such a view would come perilously near to the fallacious assumption that psychiatric treatment and psychotherapy are synonymous. Yet it may well be that I have derived an erroneous impression from the fact that Dr. Luff concentrates upon the above issue, and only alludes to other forms of treatment (such as "environmental" and "physical") when discussing "psychoses." It would, I hope, be wrong to infer that Dr. Luff regards other forms of psychiatric treatment as second bests, or wishes to imply that they may not be necessary, and indeed essential, for treating "neuroses" as well. But if considered important, why were they left out?

The problem as I see it is not only what form of psychotherapy but also what other forms of psychiatric treatment should be employed; and in order

to assess the effect of treatment, not only the psychiatric prognosis but all modifying influences should be taken into account. Now psychotherapy is but one example of a potentially important environmental influence; there can be others as well.

Viewed in this way the problem is a colossal one; and it might often be fallacious to consider only the type of psychotherapy, as would seem to be proposed. And here I am disturbed to find that certain of the tentative criteri that have been arrived at in the Tavistock Clinic as of possible assistance in coming to a decision on this narrower problem of the *type* of psychotherapy to be employed do not convey anything very definite to my mind. Thus, as I am not a Freudian psycho-analyst (being debarred by intellectual or, as a kindly psycho-analyst might perhaps say, by emotional difficulties from following these theories), the statement that "the degree of narcissism should not be pronounced" means little to me; whereas the statement that "the patient should not show signs of psychosomatic immaturity" means even less.

I must thank Dr. Luff for extending to me an invitation to join in an investigation into psychiatric treatment. I can assure her that I should try to coöperate to the best of my ability; and I can only hope that the difficulties I have raised are evidence of my own obtuseness rather than of any fundamental divergence in principle or practice. At the same time, as the question proposed is really such an enormous and difficult one, might not Dr. Luff be better advised to approach the Maudsley Hospital, which is so incomparably more rich in facilities, case material, and personnel? I am also sure that the collective experience of the workers at the Maudsley Hospital could be of great help to Dr. Luff in the decision as to what were, in fact, both definite and possibly fruitful problems, and as to how they might be attacked.

I am, Sir, yours faithfully,

DESMOND CURRAN.

Wimpole-street, W., Nov. 15th.

CHRYSOTHERAPY

To the Editor of THE LANCET

SIR,—We should like to add our experience to those of others, based as it is on the examination and treatment by various methods of 2000 cases. We believe that rheumatoid arthritis is a comparatively uncommon disease and that it is not the same condition as that described as "focal arthritis" or "chronic infective arthritis," which is all too common. We have tried several forms of treatment in this latter condition and whereas in suitable cases chrysotherapy may, in the present state of our knowledge, be the optimum treatment, in that it produces the quickest results, we are still of the opinion that vaccines as advocated by Dr. Warren Crowe are the soundest, most reliable, and most effective basic form of treatment. If we may criticise him, we would say that his treatment is fraught with many difficulties as regards dosage, and is not as simple as he may have led the profession to believe in his writings. We have seen so few cases of true rheumatoid arthritis that we do not feel competent to offer an opinion on the best method of treating it.

We are, Sir, yours faithfully,

F. E. GRAHAM-BONNALIE, C. G. GREY,
V. E. CLAXTON, F. T. KNOTT.
W. CORNER,

Rheumatism Clinic, Brighton, Nov. 10th.

SURGICAL TREATMENT OF PICK'S SYNDROME

To the Editor of THE LANCET

SIR,—We have read with interest the annotation in THE LANCET of Nov. 6th on this subject, but we deprecate the use of this term in connexion with the case reported by Benedetti-Valentin. Pick's syndrome, which is better called Pick's pericardial syndrome, to distinguish it from certain neurological and metabolic diseases, is described as "chronische unter dem Bilde der Lebercirrhose verlaufende Perikarditis" in Pick's original article. It is clear from the cases there described and also from those described by White and others that the essential lesion is an obliterative and constrictive pericarditis. This condition may occur as a sequel to a pericarditis with effusion (see White's case 11), and in such a case small pockets of fluid may persist. Pick's syndrome cannot, however, coexist with a gross pericardial effusion; in the case described in your article the presence of such an effusion would seem to us to rule out the diagnosis of Pick's disease.

The characteristic clinical features of Pick's syndrome are an insidious onset, predominant liver enlargement and ascites, prominent jugular veins, œdema without gross cardiac enlargement, low blood pressure and pulse pressure, and often characteristic changes in the electrocardiogram and radiogram. It seems clear that the case described by Benedetti-Valentin is one of polyserositis, possibly of a tuberculous nature, which recovered. Such cases have been known to recover spontaneously and it seems doubtful whether the operation performed played any considerable part in producing this result.

We feel that the term Pick's pericardial syndrome should be reserved for cases of true constrictive and obliterative pericarditis, and should no longer be loosely applied to any case of unexplained ascites. Surgery may achieve brilliant results in the treatment of Pick's syndrome, and of certain cases of chronic mediastino-pericarditis, but there is no good evidence that such procedures as pericardial resection (Rehn) and pericardiolysis (Brauer) are of any value in other conditions.

We are, Sir, yours faithfully,

J. MICHAEL VAIZEY,
F. J. SAMBROOK GOWAR.

Registrar's Department, London Hospital, E., Nov. 12th.

SEDIMENTATION TESTS

To the Editor of THE LANCET

SIR,—With reference to Dr. Warren Crowe's letter in your issue of Nov. 6th, may I say that I think he is scarcely fair to the standard technique of the sedimentation-rate. I am aware that he is voicing the view generally held at the Charterhouse Clinic and stated at length by Dr. A. F. H. Coke in the publications of that clinic, but I would like to point out that the standard technique has been in use at this clinic ever since its inception, during which time many thousands of tests have been carried out, and that we have always found it reliable, sensitive, and (a matter of some importance) easy for the profession generally to understand and compare with results obtained elsewhere.

I have discussed the differential sedimentation-rate with Dr. Coke, and have to confess that I still remain unconvinced of its greater value. For reasons that it is not possible to enter into here, connected with the "secondary" curves that we have obtained in our photographic tracings by oblique light, we

think that there is every reason to believe that the red cells themselves play an essential part in the test, not merely acting as indicators, and that any avoidable interference with the blood is to be deprecated.

I am aware that I am dealing here with matters largely of opinion, but I feel that due credit should be given to the standard technique of the sedimentation-rate, which I still think an excellent test and remarkably devoid of pitfalls when a proper technique is used.

I am, Sir, yours faithfully,

J. W. SHACKLE.

Red Cross Clinic for Rheumatism,
Peto-place, N.W., Nov. 15th.

UNINFORMED CRITICISM?

To the Editor of THE LANCET

SIR,—In the November number of the *Practitioner* I published what I thought to be an innocuous enough article on the causes of lack of progress at school and their treatment. Immediately after its appearance some of my remarks were quoted with varying degrees of prominence and accuracy in the daily press. So far so good. This was all good clean fun, except that criticisms of teachers were *implied* that I never made. But I now receive extracts from various provincial papers in which no less a person than Mr. R. J. Patten, president of the National Union of Teachers, criticises my statements. Amongst other comments he is reported as saying: "It is quite obvious Dr. Neustatter knows very little about the insides of our schools to-day or he would not refer to 'good floggings,' 'sarcasm,' and 'making a child look ridiculous' as methods of discipline generally in vogue." Actually I have been a part-time school medical officer for three and a half years to elementary and M.D. schools, and I never stated that flogging, sarcasm, &c., were in general vogue now. I gave *one* instance of a headmaster advocating a good flogging, and this remark was made to me.

Mr. Patten also says that the teacher who "sees far more of the child than any hospital doctor" is well aware of the effect of physical conditions (malnutrition, overcrowding) on the child. I would be the first to admit this, and a quarter of my article was devoted to physical causes. But I had public as well as council school-children in mind when writing. This brings me to the point. It does seem amazing that anyone in a responsible position should make a public criticism on hearsay statements, obviously without first having verified them by looking at the original article. As I am not at liberty to reply in the lay press, I am seeking the hospitality of your columns.

I am, Sir, yours faithfully,

W. LINDESAY NEUSTATTER.

Devonshire-place, W., Nov. 9th.

SILICOSIS

To the Editor of THE LANCET

SIR,—In your report of the presidential address to the Hunterian Society on Oct. 18th last there is a reference to silicosis in which it is suggested that autopsies on many cases certified as having died from this disease revealed no trace of it, the authority quoted being the annual report of the Chief Inspector of Factories. The relevant paragraph is to be found on p. 55 of this annual report (published in 1937):—

"It has been noted from the information received concerning deaths alleged to be due to silicosis that the post-mortem examination has sometimes revealed no trace of silicosis even after employment for many years in occupations which have produced many casesof silicosis. Since 1930, out of 189 such cases no evidence of silicosis was found in 122 and only very slight traces of silicosis in 67. The industries concerned are the pottery industry 140, sandstone industry 21, sandblasting 6, refractories industry 6, metal grinding 5, and other industries 11. The average age at death in these cases was 51·9 years and the average duration of employment 29·5 years, the longest being 60 years. This is an interesting and significant fact, since negative evidence of this character cannot fail to be of value when idiosyncrasy and selectivity are attracting so much attention. It seems difficult to explain in the case of workers exposed to siliceous dust, presumably of the same concentration of silica in the air, how and why certain of them should have escaped the effects of the dust. We have yet much to learn to explain this phenomenon."

The proper inference to be drawn from this report would appear to be, not that a diagnosis of silicosis is often made which is disproved by subsequent post-mortem examination, but that it is a curious and so far inexplicable fact that many persons can work for many years in an atmosphere containing siliceous dust without contracting this disease.

I am, Sir, yours faithfully,

City-road, E.C., Nov. 13th. DONALD C. NORRIS.

PRESCRIPTIONS BY DRUGGISTS

To the Editor of THE LANCET

SIR,—The other day, while waiting to buy some tooth-paste in a druggist's shop, I listened to a middle-aged woman who complained to the dispenser of some dyspeptic symptoms. He was tactful and sympathetic, confidently advised a well-known alkaline preparation, and gave exact details as to just how it was to be taken. Very impressive; and very reassuring. The chances that this woman has a cancer, or a psychoneurosis, or anything that matters may be remote. But all the learning of the Royal Colleges could not decide so in a couple of minutes' conversation. This is the third time within a year that I have observed pharmacists prescribing for customer's symptoms. Of course the whole question of patent medicines is very difficult, though its ostrich-like attitude does the profession little credit. But surely the risk of such abuses makes a review of the present highly unsatisfactory position very urgent.

I am, Sir, yours faithfully,

Nov. 13th. T AND H.

LYMPHOGRANULOMA INGUINALE IN THE FEMALE

To the Editor of THE LANCET

SIR,—The two cases of inflammatory stricture of the rectum, due to infection with the virus of lymphogranuloma inguinale, described in your last issue by Dr. Norman Whittaker are of considerable interest as typical examples of a condition which may escape correct diagnosis unless borne in mind.

Members of the medical profession have been very slow in accepting the true ætiology of the several manifestations of this virus infection since their attention was first directed to the subject in this country by a paper read before the Royal Society of Medicine on Oct. 1st, 1932, and subsequently by a book entitled "A Sixth Venereal Disease," published in 1933, a work with which Dr. Whittaker is apparently unfamiliar, but in which the pathogeny and relationship of the several manifestations of the infection to each other was exposed. Some of Dr. Whittaker's statements need modification to be quite

correct. The anorectal syndrome was not first described by Fournier in 1875 but by Huguier in 1848 in association with coexistent disease of the vulva and by Larsen as a condition affecting the rectum alone in 1849. The condition which Fournier described as anorectal syphiloma was without doubt of the same nature and due to this virus infection. Among other signs commonly found in the anorectal disease is a mass of hypertrophic peri-anal skin tags which have often been referred to as piles; they are very characteristic if recognised and were present in Dr. Whittaker's Case 1. In the male with anorectal symptoms (nearly always a pederast) the inoculatory lesion is commonly at the anal margin and an abscess in this neighbourhood may be the condition for which treatment is sought. This may be followed later by pararectal infiltration and stricture, possibly without affection of lymphatic glands.

Dr. Whittaker says that he has been unable to find other cases of the anorectal syndrome published in England. Perhaps he means cases in which Frei's test has been made. In the monograph mentioned above references were given to a large number of cases in the literature, which on clinical grounds—and they should be sufficient in a large proportion of cases—could be diagnosed in retrospect with very little doubt.

One further point—Dr. Whittaker's article illustrates very well how unsatisfactory is the nomenclature concerning this infection. His article bears the title Lymphogranuloma Inguinale, whereas the condition described is something else. He refers to my own case of L.I. as one of climatic bubo, which it was not, as infection was not acquired in the tropics. The terms porolymphadenitis, porolymphitis, inguinal poradenitis, and poradenitic rectal stricture might be adopted; or the designation lymphopathia venereum, now commonly used in America, would seem to be useful. Is it not possible for the matter to be settled by international agreement?—I am, Sir, yours faithfully,

Wimpole-street, W., Nov. 13th. HUGH S. STANNUS.

PANEL AND CONTRACT PRACTICE

O'er Crag and Torrent

A SCOTTISH insurance committee received intimation that an insured person could not obtain certificates of incapacity owing to the fact that no insurance practitioner would attend her. She had been in a hospital for two years and when discharged was still unfit for work. She applied to Dr. A, who told her that she was in the area of Dr. B who had an assistant residing at X, but this practitioner refused to attend her. The insurance committee took up the matter with both doctors, but each maintained that the patient was not in his area. The Department of Health being asked to define the area replied that the woman's address was within that served by Dr. A. Dr. A however protested that in order to visit the patient he had to travel almost to X (where the assistant of Dr. B resides) and then for nine miles over a hill track rising 1400 feet in two miles. After that he had to cross a river which had no bridge. The latter part of the road was impassable by car, and in the winter it was impossible to reach the house owing to snow drifts and streams running across the track. The insurance committee decided to ask the Department of Health to send the regional officer to the spot to see the conditions for himself. In the meantime it seems that Dr. A has visited the patient and issued the necessary certificates.

Transfer by Purchase

The *Journal* of the National Association of Clerks to Insurance Committees refers to a case where an insurance committee became aware that a practitioner in its area was making a practice of charging a fee of five shillings to every insured person who applied for and received his consent to an immediate transfer under regulation 16 (1) (*a*). The committee took the view that this was not a desirable practice and asked the Ministry of Health for advice whether it had any power of action against the doctor. The reply was no. To charge a fee under such circumstances does not contravene either the medical benefit regulations or the terms of service. But it is a little surprising that an insured person should be willing to pay five shillings for an immediate transfer when he has the right at the end of any quarter to transfer quite freely provided he has given a month's notice to the insurance committee of his desire to do so.

Good Propaganda

"Honest doctors are giving the same service to their insured and non-insured patients, indeed, are giving better attention to the insured as the question of the ability of the patient to pay does not arise. There is, however, the psychological aspect, and if a patient thinks that his doctor or his medicine is no good the likelihood is that his recovery will be retarded."

This is the concluding paragraph to an effective reply by a member of the Central Insurance Practitioners' Committee in the *Belfast News Letter* to correspondents who have complained of restrictions placed by the Ministry of Labour on prescribing. He points out that the insured person in Northern Ireland is entitled to obtain all "necessary" medicine, and this adjective is most important as it does not mean anything which the insured person would like to obtain at the public expense. It does not mean meat extracts or invalid foods or beverages as some would like, nor does it mean that anyone may cut out an advertisement of some so-called panacea to bring to his doctor and to ask that this and no other be prescribed. The practitioner is bound to use his best judgment in every case and to prescribe those necessary medicines in such combinations and doses as his experience may dictate. The grievance seems to have been about the use of proprietary articles. Dr. Acheson divides these into three classes—(*a*) those of which the active ingredients are known; (*b*) those of which a formula is given, but it is a formula which cannot be compounded by chemists to whom it may be taken; (*c*) those of which no information is given as to their contents. And he remarks that a self-respecting doctor should not prescribe the third class and should be chary of ordering the second. The first class is in a different category. But most of the articles used in proprietary medicines are contained in the B.P. or the 1768 pages of the B.P.C. Much has been written about vitamins and three of these can now be ordered by their pharmacopœial names. This is good propaganda.

LIVINGSTONE HOSPITAL, DARTFORD.—The foundation-stone of the new maternity wing of this hospital was laid on Nov. 6th by Mr. E. W. Meyerstein. The new wing is to be named after him and he has endowed a cot in it.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

BUCKSTON BROWNE DINNER

THE Buckston Browne dinner held at the college on Nov. 11th was attended by about equal numbers of fellows and members, according to plan. The only two speakers were Sir Cuthbert Wallace as president and Sir Buckston Browne as donor. Sir Cuthbert began by announcing that the King has assumed the title of visitor of the college: the three previous monarchs had accepted honorary fellowships, but this new honour to the college was even greater. He went on to say that the new Bernhard Baron laboratories would be opened by the Earl of Athlone on Dec. 8th, and that the research work had been maintained during the alterations. The college was, he considered, doing a good piece of imperial work in holding its primary fellowship examinations in Melbourne, Sydney, Dunedin, Bombay, and Cairo. Its increasing activities were shown by the fact that committee meetings had doubled in number during the past ten years.

Sir Buckston Browne said that this was the tenth occasion on which he had had the privilege of speaking at this "love-feast." To-day more than ever it was necessary that members of the profession should be on friendly terms. When he was a young man medicine was not properly treated in this country, but it had become more and more important and some day would, he believed, be recognised as the dominant profession.

After the dinner Prof. John Beattie, conservator and director of research, explained a cinema film showing the reconstruction of the college building, with special emphasis on the underpinning and strengthening that has proved necessary. The guests then visited the exhibition of pictures described on p. 1206.

The following is a list of those present:—

Council.—Mr. Victor Bonney and Prof. G. Grey Turner (vice-presidents), Prof. Hey Groves (Bristol), Mr. C. H. Fagge, Mr. Sampson Handley, Prof. G. E. Gask, Prof. A. H. Burgess (Manchester), Mr. Hugh Lett (master of the Society of Apothecaries), Prof. R. E. Kelly (Liverpool), Prof. Graham Simpson (Sheffield), Sir James Walton, Sir Alfred Webb-Johnson, Mr. G. Gordon-Taylor, Sir Charles Gordon-Watson, Mr. R. C. Elmslie, Mr. L. R. Braithwaite (Leeds), Mr. H. S. Souttar, Mr. W. Girling Ball, Mr. Seymour Barling, and Mr. C. Max Page.

Fellows.—Mr. P. B. Ascroft, Dr. J. O. Wakelin Barratt, Mr. D. C. Corry (Oxford), Mr. H. Corsi, Prof. P. T. Crymble (Belfast), Mr. P. W. Clarkson, Mr. Harold Edwards, Mr. Tudor Edwards, Mr. F. J. S. Gowar, Mr. Bishop Harman, Mr. C. L. Heanley, Mr. F. A. Hepworth (Saffron Walden), Mr. John Howkins, Mr. W. H. G. Jessop, Mr. Bertram Lloyd (Birmingham), Mr. T. Stewart Heslop, Mr. A. L. Light, Mr. E. K. Martin, Mr. P. J. Moir (Leeds), Mr. H. F. Moseley, Mr. G. E. Neligan, Mr. J. G. Turner, Mr. Arnold Walker, Mr. H. B. Walker (Minehead), Mr. E. G. Slesinger, Sir Holburt Waring, and Mr. Turner Warwick.

Members.—Dr. Hugh Barber (Derby), Dr. W. G. Barnard, Dr. G. T. Birdwood (Walmer), Dr. Stanley Bousfield, Dr. A. Clifford Brewer (Liverpool), Sir Bruce Bruce-Porter, Mr. N. C. Carver, Dr. Hugh Clegg, Dr. Ashley Daly, Dr. Arthur Davies, Dr. Daniel Davies, Dr. Hugh Davies, Dr. S. H. Daukes, Dr. Horace Evans, Dr. Ian Fletcher, Dr. H. T. Flint, Dr. T. F. Fox, Dr. Eric Gardner (Weybridge), Dr. E. A. Gates, Mr. Richard Gillbard, Dr. D. L. H. Goddard (Sutton), Dr. A. W. Gott (Ilkley), Dr. J. L. A. Grout (Sheffield), Dr. E. D. Y. Grasby (Tunbridge Wells), Dr. Charles Hill, Dr. E. Wilson Hird (Birmingham), Dr. L. J. Honeywill, Dr. J. H. Hughes (Liverpool), Colonel E. T. Inkson, V.C. (Chichester), Mr. Harold Jaques (Burnham), Prof. A. St. G. Huggett, Dr. J. B. Jordan (Birmingham), Dr. Alan Kekwick, Dr. J. C. Matthews (Downton), Dr. G. O. Montgomery (Croydon), Mr. C. R. Morison, Dr. E. Walter Morris, Dr. H. J. S. Morton, Dr. A. R. Neligan (Droitwich), Dr. Charles Newman, Dr. Howard Nicholson, Dr. S. Chalmers Parry (Southampton), Dr. Wilson Parry (Ampthill), Mr. J. Lewin Payne, Dr. Hugh Powell (Weston-super-Mare), Dr. Harold Pritchard, Dr. L. W. Proger (pathological curator), Dr. Walter Radcliffe (Wivenhoe), Dr. J. T. Rowe (Basingstoke), Dr. R. W. Scarff, Dr. Keith Simpson, Dr. W. H. Smailes (Honley), Mr. Evelyn Sprawson, Dr. S. R. Trick, Dr. H. F. Vandermin (Enfield), Dr. H. Vane-Sutton, and Dr. W. N. P. Wakeley.

Others present.—Dr. C. F. White (Caterham), Prof. John Beattie (director of research), Mr. Kennedy Cassels (secretary), Mr. Horace Rew (director of examinations), Mr. W. R. Le Fanu (librarian), Dr. A. J. E. Cave (assistant conservator), and Mr. W. F. Davis.

ROYAL SOCIETY OF MEDICINE

BIENNIAL DINNER

Sir John Simon and Mr. Walter Elliot paid tribute to the memory of Ramsay MacDonald at the biennial dinner of the Royal Society of Medicine on Nov. 10th where they were guests. Sir John Simon spoke of him as being supremely endowed with the lovely virtue of courage and Mr. Elliot affirmed that democracy proved its worth as a system of government when it gave opportunity to such men to rise and take over the levers of power. In proposing the Health of the Society Sir John Simon contrasted the increasing specialisation of the doctor with the increasing breadth of view which is demanded from the politician. But he thought that beneath the multiplicity of experts there was to-day a growing unit of understanding among scientists, which was fostered by the influence of bodies such as this society. He congratulated the doctor on being able to work free from the irrelevant and ignorant interruptions which democracy, no doubt rightly, imposed upon the politician, who had often to conduct delicate negotiations in public, while the surgeon turned all relatives out of the room and reduced his remaining victim to unconsciousness before beginning his work. In medicine exact knowledge was of course essential and no doctor could attempt to treat a patient as lightheartedly as a distinguished jurist who undertook his first case in the Admiralty Court on the principle "That if you remember port is red that's all that matters." In replying, Sir John Parsons, the president, said that the flourishing state of the society was due to the esprit de corps of its members and the efficiency and enthusiasm of its officers, and in particular of its secretary Mr. G. R. Edwards. He also referred to the work of Dr. de Bec Turtle, whose term of office as treasurer was coming to an end. He took the opportunity of reminding the Chancellor of the Exchequer that doctors were on the whole impecunious; since they made their money from disease, the more successful they were in its prevention and cure the poorer they became. The profession as a whole considered those who had stormed the citadel of wealth as renegades and traitors to the Hippocratic oath; or they were those who had given up medicine and taken up "that form of literature which is rightly called fiction."

Sir Alfred Webb-Johnson welcomed the newly elected honorary fellows of the society, Sir Frederick

Hobday, Sir Robert Muir, and Mr. Royal Whitman, and the Semon lecturer Prof. Schmiegelow. He pointed out that in England Simon was a household word from Simple Simon of the nursery rhyme to Simon the Cellarer of the students' song. To the guest of the evening whose first budget was approaching he addressed the biblical question: "What thinkest thou Simon? Of whom do the kings of the earth take custom or tribute? Of their own children or of strangers?" The Simon of history, he added, was in favour of the strangers. He felt that perhaps there was room for more medical men in the conduct of affairs of State, and his brethren would watch Mr. Elliot's career with interest and pride—but without anxiety. Mr. Elliot, who the president averred was one of the few Scots to show some rudiments of a homing instinct, said that after partaking of the lavish hospitality of the society it was but fitting that he should leave immediately for the hungry land of Scotland to recover. He said how happy he was to be once more among the brothers of his craft. He pointed out that the Government of England was carried out by amateurs and that one seldom found a distinguished doctor as Minister of Health, seldom a distinguished general as Secretary of State for War, and never an admiral as First Lord of the Admiralty. He reminded the Chancellor that though £150 to £200 million were spent every year on the care of the sick only £40 million found its way to the practising doctor. He associated himself with the president's plea to the Chancellor all the more warmly because, though now he might be sitting in the uncertain seats of the mighty, in the future he might once more have dealings with the mammon of unrighteousness and find himself listening for the tinkle of the night-bell. He gave the company the old greeting of Bon Accord—happy to meet, sorry to part, and happy to meet again.

PARLIAMENTARY INTELLIGENCE

JUVENILES AND HEALTH INSURANCE

THE MINISTER'S STATEMENT

IN the House of Commons on Nov. 11th the National Health Insurance (Juvenile Contributors and Young Persons) Bill was read a second time. In moving the second reading Sir KINGSLEY WOOD said the object of the measure, which concerned about 1,000,000 boys and girls, was to fill the gap which at present existed in the public provisions for their medical care and attention between the time of their leaving school and their coming under the provisions of the National Health Insurance Scheme by virtue of insurable employment after the age of 16. This provision linked up the school medical service with medical benefit under National Health Insurance. The number of boys and girls affected would fall with the raising of the school-leaving age, and as a result of the fall in the birth-rate during the past fifteen years. But whatever the numbers might be he hoped that this proposal would be regarded as an important protection for this section of the community and do something to ensure their happiness and efficiency. The medical service under the Bill would be of the same comprehensive character as that given to the existing insured population. It would be a full general practitioner service and include all necessary medicines. The cost of the benefit was to be met as under the National Health Insurance scheme by a weekly contribution divided equally between the young worker and his employer together with a fixed contribution from the Exchequer. The contribution would be at the rate of 4*d*. a week, and as in the main scheme the proportion of the cost of benefit and administration payable by the State would be one-seventh in the case of boys and one-fifth in the case of girls. Contributions would be paid by means of stamps on cards issued and collected by the approved societies, while the services of the insurance committees would also be used for the provision of medical benefits in the same way as for present insured persons. As under the main scheme, contributions would not be payable during periods of unemployment or sickness or while the boy or girl was not available for work, as, for example, when they, as they might, returned to school. There had been no substantial request for cash benefits for juveniles. If they were proposed it would involve considerable inroads into their weekly earnings. Provision was made for enabling the new entrants to become members of the approved societies, and this would enable them to obtain the full advantages of the main scheme when they became insured under that scheme on reaching the age of 16. It was anticipated that all but a very small percentage of these boys and girls would join approved societies, but for those who did not do so it was provided that their contributions should be paid into a special fund out of which the cost of their medical benefit would be paid. The solvency of this fund would be guaranteed by the reserve suspense fund of the main scheme. The title of the young people concerned to medical benefit having been acquired when the boy or girl first took up insurable employment after leaving school continued until the age of 16½, or until the title to full insurance was acquired by reason of insurable employment after the age of 16, whichever happened first. The title of these young people to medical benefit would not be dependent on the individual amount of their contributions. An important provision of the Bill was that for linking up the insurance medical service with the school medical service by arrangements under which any insurance doctor who desired to refer to the school medical record of a young patient would be able to obtain confidentially such particulars and information as he required in relation to the medical supervision which would be provided. Under the Bill young people would join societies at the age of about 14½ instead of 16, and under existing regulations they would become entitled to dental benefit at the age of about 17 instead of 18½. The period of juvenile membership of an approved society would also be counted towards the qualifying period for treatment and additional benefits such as dental and ophthalmic benefits when the juvenile contributor became an ordinary insured person.

CRITICISM OF THE PROPOSALS

In the discussion which followed Mr. GREENWOOD suggested that the scheme should be non-contributory and include cash benefits. The medical benefit offered he thought was negligible. He still looked forward to a continuous health service from the cradle to the grave.—Sir FRANCIS ACLAND said the Bill did something of extraordinary value in reducing the gap before dental treatment was available to the adolescent.—Sir H. MORRIS-JONES regretted the absence in the Bill of provision for dental and optical benefits. These could, he understood, be dealt with later by regulation. He hoped a complete school medical record of the child would be available to his medical attendant.—Mr. LOGAN hoped parents would not rush their children into any approved society but would choose societies which gave good benefits. The present inequality of benefits in different parts of the country was, he said, a curse.—Mr. DENMAN said that medical opinion was practically unanimous that the most effective medical supervision was that of the family doctor, and the fact

that the Bill was remedying a little bit of the trouble only threw into relief the amount of ground still to be covered.—Viscountess ASTOR also complained of patchwork Bills which left untouched the problem of the rejected recruit and the physically deficient child. Let them go, she said, to the Margaret Macmillan centre in Deptford to see what could be done by looking after the children from 2 to 5.—Dr. HADEN GUEST hoped the Minister would outline some method by which dental treatment could be given; every medical man was agreed on that.—Sir E. GRAHAM-LITTLE welcomed the Bill because the adolescent was now often put to physical exercises for which his frame was not fitted. He hoped optical benefit would be provided under this measure.—Mr. G. GRIFFITHS said the chief defect of the Bill was that it did not provide for a State medical service. Were there such a service for the treatment of diabetics as there was for T.B. and V.D. cases there would be something to be said for a Bill like this.

THE PARLIAMENTARY SECRETARY'S REPLY

Mr. BERNAYS said boys or girls who stayed at school after 14 remained under the school medical service, but they could not count the extra year at school as part of the waiting period for dental benefit. As regards cash benefits a boy would receive them when he had paid 26 contributions after the age of 16. Juveniles would not have to prove unemployment by franks on their cards. A juvenile would get his medical benefit up to 16½ years of age in all cases. It was true that if a boy or girl reached 16½ without getting any employment after the age of 16 he fell out of insurance and had to start again when he subsequently obtained employment. Such cases, however, were very rare. He would look into the question as to whether any amendment of the 1924 Act was necessary. The Government were fully alive to the importance of prevention rather than cure in regard to their health policy. Juveniles would get dental benefits when they became fully insured out of the funds of the approved societies which they joined, irrespective of the number of individual contributions. He had made inquiries and he found that 5434 societies or branches of societies out of a total of 6125 did in fact provide dental benefits. If a doctor said that insulin was necessary the dependants of insured persons could get the insulin free provided that their income was not above £250 per year.

NOTES ON CURRENT TOPICS

Welfare of Blind Persons

IN the House of Commons on Nov. 11th Sir KINGSLEY WOOD, Minister of Health, moved the second reading of the Blind Persons Bill. There were, he said, about 78,000 blind persons registered in England, Wales, and Scotland, of whom nearly 57,000 were aged 50 or over, and there were 8000 blind persons between the ages of 40 and 50. He did not think that the number of blind persons was increasing in this country. The fact that the total number of registered blind persons had increased was probably due to more complete registration, longer life, and greater inducements to blind people to register to-day. The application of increased knowledge had caused the age at which blindness occurred to become steadily and progressively later. The number of blind children between the ages of 5 and 16 had fallen since 1925 from 3104 to 1916, a decrease of over 38 per cent. Only 2·95 per cent. of the 8700 new cases who registered in the year ended March 31st, 1937, were under the age of 16 and some 89 per cent. were over the age of 40. Blindness was an especially terrible handicap to those over 40, who could not normally be trained in a new form of employment; and the first clause of this Bill was a reduction of the age for the receipt of an old age pension in the case of blind persons from 50 to 40. Another important proposal in the Bill provided that all local authorities—not only those who had exercised their option—should grant domiciliary assistance to blind persons exclusively under the powers of the Blind Persons Act. The clause also required that in assessing the needs of a blind person the council should take into account the needs of any dependants in his household. The Bill would in no way check or retard the work of voluntary agencies or the progress in welfare services for the blind, in preventive work and in the amelioration of their conditions. He wished to emphasise the importance of home visiting and home teaching, especially in connexion with training of the blind in the early years of their affliction.

Mr. ARTHUR GREENWOOD said that this Bill would result in bringing into pension in England and Wales about 7000 people between 40 and 50, at a maximum annual expenditure of about £160,000. The selection of the age of 40 was arbitrary; it had better have been 35 or 30 or even 16; there were only 9500 blind people between 16 and 40 years of age and the cost would be small. He would have liked the Minister to have undertaken the larger problem of establishing proper regional authorities for the welfare of the blind, though the Labour Opposition would not oppose the second reading of the Bill.—Mr. GRAHAM WHITE shared the regret that the Bill was not of wider scope.—Sir FRANCIS FREMANTLE said that the measure was proposed only as a small step towards improving the lot of the blind; he would warmly endorse its extension later, and also of special provision for the deaf. By support of such bodies as the British Social Hygiene Council, whose propaganda had helped to reduce blindness due to venereal disease, and by the further diminution of blindness resulting from improved midwifery services, there should be a decrease in the number of the blind, which might enable provision to be made for them from the age of 18 upwards.—Mr. LANSBURY approved the Bill so far as it went, but regretted that no national organisation had been proposed whereby the State should take over the entire cost of assisting the blind.—Mr. JAMES REID, Solicitor General for Scotland, said that in Scotland there had been difficulty at one time for lack of a standardised method of determining whether a person was blind within the meaning of the Act. In 1931, after consultation with various ophthalmic surgeons, a universal test operating for the whole of Scotland had been adopted. The test was mostly carried out by ophthalmic surgeons acting in pairs in four or five regional clinics, of which the furthest north was at Inverness.—Mr. F. O. ROBERTS appealed for some kind of machinery to deal with the difficulties of the partially sighted, or the partially blind.—Mr. BERNAYS, Parliamentary Secretary to the Ministry of Health, said that to burden the State with the whole responsibility for the blind would be contrary to the plan followed from the Poor Law of 1603 down to the present day. The responsibility had been a partnership between the State, the local authorities, and voluntary agencies, and the State was now coming forward with additional assistance. It was not true to say that the blind would not benefit from this Bill. Those who did not receive assistance from local authorities and those who lived in districts where rates of augmentation were low would receive a valuable addition to their income. A substantial number of blind persons hitherto unwilling to apply to local authorities for assistance would now do so for relief under the Blind Persons Act and would not have any stigma of poor-law relief. The Government had chosen the age of 40 because of the difficulty of training for a trade after that age. To lower the age below 40 would be to diminish the incentive of blind persons to earn a livelihood. To give a pension at 18 would remove much of the justification for the great sums spent on workshops designed to help blind people to become useful citizens. The Minister could hold out no hope of reducing the age below 40.—The Bill was read a second time.

QUESTION TIME

WEDNESDAY, NOV. 10TH

Public Health Handbooks

Sir FRANCIS FREMANTLE asked the Minister of Health if he had considered the copy of a handbook of public health and other services of the royal borough of Kensington which had been sent to him; and, in view of the fact that the information so given to the public was at present generally lacking and was greatly needed, if he would provide for similar information to be publicly available and distributed, free or on sale, by every local authority.—Mr. BERNAYS, Parliamentary Secretary to the Ministry of Health, replied: Yes, Sir. In the opinion of my right hon. friend publications of this kind are most valuable, particularly where as in this instance particulars as to voluntary organisations are also given. My right hon. friend is in touch with the Central Council for Health Education on the general point raised in the latter part of the question.

Sleeping-sickness in Nigeria

Mr. HOLDSWORTH asked the Secretary of State for the Colonies if he had any information with regard to the campaign against sleeping sickness in Nigeria.—Mr. ORMSBY-GORE replied: An expanded scheme for the control of sleeping sickness in Northern Nigeria came into operation this year. The scheme, which is additional to other methods of control already carried out by the Government, will extend over a period of five years at a cost of £30,000 per annum, of which £19,000 per annum will be provided from the Colonial Development Fund.

THURSDAY, NOV. 11TH

Medical Certificates and Unemployment Relief

Mr. ANDERSON asked the Minister of Labour whether he would repay the cost of medical certificates which must be supplied in claims for nourishment allowances under the Unemployment Assistance Board.—Mr. ERNEST BROWN replied: I am informed by the Unemployment Assistance Board that there is no invariable practice of requiring a medical certificate as a condition of increasing an allowance for the purpose of providing extra nourishment. Where, however, a doctor certifies that his patient is in need of extra or special food as distinct from medicine or drugs the Board's allowance is usually adjusted to meet any extra outlay by the applicant in obtaining such food. The furnishing of the certificate is regarded as part of the medical service rendered by the doctor, any payment for which falls outside the Board's powers by reason of Section 38 (4) of the Unemployment Assistance Act, 1934.

The Oslo Breakfast

Mr. LEONARD asked the Parliamentary Secretary to the Board of Education whether he would have an inquiry made into what was known as the Oslo breakfast which had had such beneficial results on the well-being of schoolchildren in Oslo, with a view to similar action being considered by educational authorities in this country.—Mr. KENNETH LINDSAY replied: The Board have full information as to the Oslo breakfast, and the claims made for it have recently been considered by the Advisory Committee on Nutrition, appointed by my right hon. friend the Minister of Health. While the value of the experiment is fully recognised, its adoption in this country would be open to certain practical objections, and it is doubtful whether this type of meal would satisfy English tastes. There are other equally good and convenient methods of supplementing the home diets of children who are found to be in need of additional nourishment.

Insurance Practitioners and Post-graduation Courses

Sir ROBERT RANKIN asked the Minister of Health what arrangements would be made for the financing of the proposed post-graduation course for insurance doctors; to what extent the necessary cost would be borne by the insurance fund; and what complaints he had received about such procedure from the various insurance committees.—Sir KINGSLEY WOOD replied: With regard to the first two parts of the question, payments in respect of fees and expenses incurred by insurance doctors in attending approved post-graduate courses will be made out of the unclaimed proceeds of sales of National Health Insurance stamps, with the aid of the normal Exchequer grant. As regards the last part of the question, I have received no complaints from insurance committees as to the source from which the courses are to be financed, but certain administrative questions are under discussion with the National Association of Insurance Committees.

Cases of Suicide

Mr. WILSON asked the Home Secretary the average number of cases of suicide and of attempted suicide for the five years 1909 to 1913, and for the last five years for which the information was available; and whether, if the increase was considerable, he could give any explanation for it.—Sir SAMUEL HOARE replied: During the five years from 1909 to 1913 the average number of verdicts of suicide was 3543 and the average number of cases of attempted suicide known to the police was 2399. During the five years from 1932 to 1936 the corresponding figures were 5372 and 3284. These figures must be considered in connexion with increase of population, and especially with the large increase of population in the higher age-group. It is amongst people over 45 years of age that a high proportion of suicides and attempted suicides occur, and the population of persons over 45 years of age has increased by 55 per cent. since 1911. The following is a statement showing the number of suicides in 1911 and 1935 according to the Registrar-General's Statistical Review, with some age-group comparisons based upon population figures from the Census Volumes of 1911 and 1931.

Age-group.	Population 1911 census.	Suicides in 1911.	Suicides 1911, per 100,000 of 1911 population.	Population 1931 census.	Suicides in 1935.	Suicides 1935, per 100,000 of 1931 population.
Under 15 ..	11,050,867	8	0·07	9,520,190	5	0·85
15 and under 20	3,336,621	127	3·61	3,434,591	79	2·30
20 „ „ 25	3,175,718	223	7·02	3,494,487	245	7·01
25 „ „ 35	5,936,235	596	10·01	6,412,386	727	11·34
35 „ „ 45	4,845,881	729	15·04	5,466,592	828	15·15
45 „ „ 55	3,528,269	807	22·87	4,935,576	1191	24·13
55 „ „ 65	2,298,385	651	28·32	3,725,428	1243	33·37
65 and over ..	1,878,516	447	23·80	2,963,209	905	30·54
—	36,050,492	3588	9·95	39,952,377	5223	13·07

First-aid Stations for Air-raid Casualties

Dr. HADEN GUEST asked the Home Secretary what numbers of first-aid stations for dealing with air-raid casualties it was proposed to set up in the area of the metropolitan police district; whether each station would provide for treatment of wounded and gas cases, for cases affected by mustard gas or other vesicants, and for persons whose clothing alone was contaminated; and at what distances apart these stations would be placed.—Mr. LLOYD, Under-Secretary, Home Office, replied: It has been recommended by the Home Office that first-aid posts should be so located as to ensure that in no case has any individual to travel a distance exceeding one mile. The number of first-aid posts in the area of the metropolitan police district cannot be given until the schemes prepared by the local authorities concerned have been submitted and approved. Each first-aid station will provide for the treatment of wounded and gas cases and for persons whose clothing alone is contaminated.

Dr. HADEN GUEST asked the Home Secretary what numbers of persons would be employed in the area of the metropolitan police district in a fully developed air-raid precautions scheme, in each of the following capacities: dressers and nurses in first-aid stations, in casualty clearing hospitals, and in base hospitals; members of decontamination squads; breakdown and rescue squads; road and

engineering repair squads; stretcher-bearer squads; ambulance drivers and personnel; air-raid wardens; gas detection officers; and normal and additional fire-fighting personnel.—Mr. LLOYD replied: The scales for the provision of personnel recommended in air-raid precautions publications for the following services are as shown in the following Table:—

Nature of service.	Size of unit.	Recommended provision per 100,000 population.
First-aid parties (including stretcher-bearers).	4 persons per party.	12–15 parties.
Rescue parties.	6–8 persons per party.	3–4 parties.
Decontamination squads.	6 persons per squad.	6 squads.
Air-raid wardens, stationed at "posts."	2 wardens per post.	200 posts.

These scales are now under further consideration in the light of practical experience so far gained.

The provision of first-aid posts is recommended on a basis that no casualty would need to travel more than a mile to reach the nearest post. The number of persons required to staff a post is at present under review, but may amount to 50 or more, of whom a proportion only need be trained dressers. Nurses in the ordinary sense would not be employed in first-aid posts. The numbers of dressers and nurses in hospitals would depend on the number of beds, and no figures are available.

No precise scales of provision of ambulance personnel or gas detection officers have yet been laid down. It is not contemplated that particular scales should be recommended for breakdown and repair parties for the numerous special services, such as roads, water, gas, electricity, and so on. The scale of provision would in the first instance be left to the authority or undertaking controlling the service. The normal fire-fighting personnel in the metropolitan police district number approximately 3500; the number of auxiliary firemen who will be required cannot be estimated pending the submission of the emergency fire brigade schemes by the local fire brigade authorities in the district. As regards those personnel for whom scales of provision are quoted above, the actual numbers who will be employed will in any case not be known with accuracy until the air-raid precaution schemes of the respective local authorities have been submitted and approved.

Accommodation for Lepers

Sir THOMAS MOORE asked the Minister of Health whether he was aware that out of the 60 known lepers in Great Britain only 12 could receive treatment in homes suited for that purpose; and if he proposed to take any action to remedy this state of affairs, both in the interests of the lepers themselves, their families, and the general public.—Sir KINGSLEY WOOD replied: I am advised that in the conditions which exist in this country the disease referred to is very unlikely to be conveyed from one person to another, and no action would appear to be called for in the interest of the public health. If, however, my hon. friend has any particulars of individual cases which he desires to bring to my notice, I shall be glad to know of them and to make the necessary investigations.

Foot-and-mouth Disease Serum

Major CARVER asked the Minister of Agriculture whether he had considered inoculating cattle in this country with a special German serum against foot-and-mouth disease; and whether any such serum was obtainable.—Mr. MORRISON replied: I am aware that it has been claimed that an immune serum will protect susceptible animals against infection for a period not exceeding 14 days. A serum obtained from a German source has been experimentally used in this country, but in view of the results obtained both in the field and in the laboratory, it was decided not to persevere with the experiments. The Foot-and-Mouth Disease Research Committee reported this year that "such serum as is at present available cannot be relied on to protect a bovine from infection when intimately exposed to a highly infective case of disease."

MONDAY, NOV. 15TH

Foot-and-mouth Disease

Mr. V. ADAMS (Leeds W., U.) asked the Minister of Agriculture if, in view of the wide and sudden incidence of foot-and-mouth disease, he could say whether the ailment was at present known to be susceptible of prevention and/or cure; and what money was being spent by his department on scientific research into the causes, prevention, and cure of the disease.

Mr. O. LEWIS (Colchester, U.) also asked the Minister of Agriculture what steps were being taken to encourage research in connexion with foot-and-mouth disease, particularly with regard to the possibility of the discovery of a remedy which would avoid the necessity of slaughtering large numbers of cattle whenever an outbreak occurs.

Mr. W. S. MORRISON said that the disease is curable, though fatalities occurred in the case of very young animals and exceptionally among adults. No innocuous method of producing prolonged immunity against the disease has been discovered. Referring to the temporary protection afforded by the use of immune serum, the Foot-and-Mouth Research Committee reported recently that "such serum as is at present available cannot be relied on to protect a bovine from infection when intimately exposed to a highly infective case of disease." The most effective method of preventing the spread of infection is the prompt slaughter of affected animals and those in immediate contact, so as to stop the manufacture of virus and to destroy existing virus by disinfection. It has been shown repeatedly abroad and is being shown to-day in Western Europe that alternative methods are not successful in preventing the widespread diffusion of disease. The research work in progress under the supervision of the Foot-and-Mouth Disease Research Committee is at present costing between £16,000 and £17,000 a year. The present position is fully set out in the introduction to the Fifth Progress Report of the committee which was published in May last by H.M. Stationery Office. Events in the present outbreak, he added, showed that the alternative method of treatment by serum, as used in some countries, had not been successful in preventing the disease spreading.

Sir PERCY HURD (Devizes, U.) asked the Minister of Agriculture what further measures were being taken to avert foot-and-mouth disease, especially in view of the evidence which went to show that the major sources of infection were the marrow bones of Argentine meat, the rind of Polish and other Eastern European bacon, and other raw animal products from countries infested with the disease.

Mr. W. S. MORRISON said that following the discovery of lesions in a consignment of pig carcasses from the continent in 1926, an order was issued prohibiting the importation of all fresh meat from the Continent of Europe, and this order is still in operation. There was no evidence, however, to suggest that the present series of outbreaks was due to infection introduced by raw animal products, and the restricted area in which the numerous independent centres of infection had occurred suggested that articles of commerce were not the vehicles of infection in this case. It did not appear necessary, therefore, to take further measures in regard to the trade in raw animal products.

TUESDAY, NOV. 16TH

Malnutrition among Glasgow Children

Mr. DAVIDSON asked the Secretary of State for Scotland if he would state the total number of school-children in Glasgow, medically defined as suffering from malnutrition, receiving free meals at school for the years ending September, 1936 and 1937, respectively.—Mr. ELLIOT replied: The numbers of children in Glasgow receiving free meals at school in the two years referred to were 8105 and 8154 respectively. I am informed that while many of these children are placed on the free meals register as a result of medical inspection, the majority are so placed on the recommendation of the head teacher and class teacher. The statistics available do not enable me to state the numbers in each category.

PUBLIC HEALTH

The Typhoid Outbreak at Croydon

UP to Tuesday last 70 cases of typhoid with 5 deaths had been reported in the South Croydon area. As we stated last week, the infection was traced to contamination of the Addington well, the distribution of which is geographically limited, so that the population at risk is not more than one-twentieth of the total population of the borough. Roughly speaking, it covers the high-lying ground on the east side of the Brighton road, with a small area on the opposite side of the road. It has been noted that many of the patients have been of the professional classes. Dr. J. R. Hill, who qualified at St. Bartholomew's Hospital three years ago, died after a short illness at the London Fever Hospital, and another of the deaths was that of Mr. E. L. T. Perry, a South Croydon schoolmaster. Further cases are expected to be reported during this week, the infected source of water having been cut off on Nov. 4th. The local chamber of commerce has expressed the opinion that the public should have been informed earlier of the outbreak in order to put people on their guard. Dr. Oscar Holden, the medical officer of health, has emphasised the difficulty of diagnosis of typhoid in the early stages—3 of the patients were sent to the isolation hospital with some other diagnosis—and Alderman Mrs. Roberts, chairman of the public health committee, states that the Ministry of Health was informed on Nov. 1st and since the 3rd has given the assistance of a medical officer and an engineer. A prevalent statement that the isolation hospital in Croydon had been filled to capacity has been officially denied. Some patients however have gone to the London Fever Hospital for their treatment.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 6TH, 1937

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2574; diphtheria, 1698; enteric fever, 36; pneumonia (primary or influenzal), 812; puerperal pyrexia, 185; cerebro-spinal fever, 8; acute poliomyelitis, 26; acute polio-encephalitis, 1; encephalitis lethargica, 4; dysentery, 118; ophthalmia neonatorum, 86. No case of cholera, plague, or typhus fever was notified during the week.

Cases of dysentery were reported from Farnham (Surrey) 47, Bradford, Sheffield, and Newcastle-on-Tyne each 7, Lambeth and Birmingham each 6, Bedford 4.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 12th was 3653, which included: Scarlet fever, 922; diphtheria, 1448 (diphtheria carriers, 20); measles, 113; whooping-cough, 265; puerperal fever, 21 mothers (plus 13 babies); encephalitis lethargica, 282; poliomyelitis, 12. At St. Margaret's Hospital there were 27 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 124 great towns, including London, there was no death from small-pox or enteric fever, 18 (0) from measles, 2 (0) from scarlet fever, 8 (1) from whooping-cough, 42 (5) from diphtheria, 44 (11) from diarrhœa and enteritis under two years, and 38 (6) from influenza. The figures in parentheses are those for London itself.

Liverpool had 10 fatal cases of measles, Manchester 3, and Tynemouth 2. Liverpool also reported 4 deaths from whooping-cough. Diphtheria was fatal in 28 great towns, Liverpool reporting 5 deaths, Manchester 3.

The number of stillbirths notified during the week was 287 (corresponding to a rate of 42 per 1000 total births), including 49 in London.

OBITUARY

ROBERT VALENTINE DOLBEY, M.S. Lond., F.R.C.S. Eng., F.A.C.S.

Prof. Dolbey, who died on Nov. 13th at Chelsworth Hall, Suffolk, in his sixtieth year, was the son of Thomas Dolbey, barrister, of the Middle Temple, and was educated at Dulwich College and the London Hospital. His course was protracted by service in the South African War from which he returned with a medal and five clasps. After qualifying in 1902 he was resident at the London Hospital in various capacities and assisted in the throat and pathological departments. The next part of his life was spent in British Columbia where he built up a large practice which he abandoned in 1914 to join the army on the Marne as medical officer of the 2nd Battalion, King's Own Scottish Borderers. Later he served in Tanganyika and on the Italian front where he organised the dressing stations. In 1919 he was appointed to the chair of surgery at Cairo, continuing to build up the admirable organisation there founded by Milton and Madden. He was a popular teacher and a ready writer, witness accounts of several campaigns which appeared at this time. As surgeon to the Kasr-el-Aini Hospital he had opportunity to study the incidence of cancer and surgical tuberculosis in Egypt, and with his pupils made substantial contributions to medicine, two of which appeared in our columns in 1924. After his marriage in 1925 to Virginia, daughter of William Gay, of Limerick and Richmond, Virginia, he returned for a while to private practice in Cairo. His death leaves a gap in a circle which valued him for his forceful personality. His widow survives him with a son and a daughter.

RALPH HENRY BROWNE-CARTHEW, M.D. Durh.

Dr. Browne-Carthew, who died in London on Nov. 11th at the age of 82, was in his early years medical officer to the King's Lynn and West Norfolk Hospital and M.O.H. to the Downham rural district, when he was sometimes in attendance on the royal household at Sandringham. Later his flair for languages and love of travel took him to Rennes where he was officier de santé, to Nauheim where he studied Schott's methods, and to the South African campaign, throughout which he served as civil surgeon. On his return he settled in London, becoming medical officer to the electrical departments of the Westminster Hospital and the East London Hospital for Women and Children; he contributed some early work on radium applicators to our columns. Latterly he had spent a good deal of his time in Biarritz.

THE SERVICES

TERRITORIAL HOSPITALS

THE cadres of the 29 Territorial Army general hospitals for home service, whose formation was announced in June, are to be located 4 in the London area, 3 in or near Liverpool, 2 each at Leeds and Glasgow, and 1 at or near Aberdeen, Bath, Bournemouth, Brighton, Bristol, Cambridge, Cardiff, Darlington, Dundee, Edinburgh, Exeter, Leicester, Manchester, Newcastle-on-Tyne, Norwich, Oxford, Reading, and Torquay. Permission to start recruiting for the cadre at Manchester has been given.

The designations of the new hospitals will be as follows: 1st, 2nd, 3rd, and 5th London; 1st, 2nd, and 3rd Eastern; 1st to 5th Northern; 1st, 3rd, 4th, 5th, and 6th Scottish; 1st to 7th Southern; and 1st, 3rd, 4th, 5th, and 6th Western general hospitals. The 2nd Scottish, 2nd Western, and 4th London general hospitals are already in existence.

MEDICAL NEWS

University of Cambridge

On November 12th the following degrees were conferred :

M.B., B.Chir.—G. E. Yardley, C. H. C. Ferguson, and Anthony Cursham.
M.B.—A. M. Rhydderch (by proxy), J. G. Connell, and H. F. Bateman.

University of Glasgow

On Nov. 13th the following degrees were conferred :—

M.D.—J. L. Horne and Eliza M. K. Stevenson (with high commendation) ; R. A. Wilson.
M.B., Ch.B.—K. M. MacKenzie.

University of Sheffield

The following external examiners have been appointed in the faculty of medicine : Dr. H. L. Tidy (medicine and therapeutics), Mr. E. Rock Carling (surgery), Prof. D. Dougal (obstetrics and gynæcology), and Prof. H. F. Humphreys (dental subjects). Dr. H. J. Barrie has been appointed demonstrator in pathology.

The committee of management of the Sheffield Hospitals Council (Inc.) will include : Prof. A. W. Pickard, the vice-chancellor of the university, the treasurer, Prof. H. N. Green, M.D., Mr. Albert Harland, and Prof. E. J. Wayne, F.R.C.P.

Royal College of Surgeons of England

At a meeting of the council held on Nov. 11th, with Sir Cuthbert Wallace, the president, in the chair, it was announced that the King had consented to assume the post of Visitor to the college, and that the Earl of Athlone will open the Bernhard Baron research laboratories at the college on Dec. 8th.

Sir Cuthbert Wallace and Mr. Seymour Barling were appointed to give evidence on behalf of the college before the inter-departmental committee on the rehabilitation of persons injured by accidents. It was reported that Mr. G. C. Knight and Mr. G. M. Hills had been reappointed Mackenzie-Mackinnon research scholars.

The following hospitals were recognised for the six months' surgical practice required of candidates for the final examination for the fellowship : Kent and Canterbury Hospital (first and second resident house surgeons) ; Bolingbroke Hospital, Wandsworth (resident surgical officer and house surgeon).

Diplomas of membership were granted to the candidates named as receiving the licence of the Royal College of Physicians in our issue of Nov. 6th (p. 1112), with the exception of Neil Hamlin and A. M. Spencer. Diplomas in public health were also granted jointly with the Royal College of Physicians to the candidates mentioned in the same report.

British Association of Radiologists

In our list of London medical societies published last week reference should have been made to this society. Prof. J. M. Woodburn Morison is its president, Dr. S. Cochrane Shanks and Dr. F. P. Montgomery are its hon. secretaries, and it may be addressed at 32, Welbeck-street, London, W.

A Society of Medical Editors

A number of editors and assistant editors of medical journals—including general, special, provincial, and hospital journals—met in London on Nov. 6th when it was decided to form a society for the discussion of matters of common interest. Sir Humphry Rolleston has consented to be the first president. Further information may be had from Mr. E. Watson-Williams, 65, Pembroke-road, Clifton, Bristol 8.

British Health Resorts Association

This association, which held its annual meeting in London last Friday, has arranged a conference at Bath from Dec. 3rd to 5th. Dr. G. R. P. Aldred-Brown will open the first discussion on the spa as a national asset in the maintenance of physical fitness. Dr. F. G. Thomson will open the second discussion on hydrological methods in the treatment of injuries and diseases of the joints. Further information may be had from the general secretary of the association, 199, Piccadilly, London, W.1.

Medical Research Council

Our advertisement columns contain particulars of a vacancy for a medical man on the administrative staff of the Medical Research Council.

Central London Throat, Nose, and Ear Hospital

A course for general practitioners will be held at the hospital from Nov. 22nd to 27th. Further information may be had from the dean of the hospital, Gray's Inn-road, W.C.1.

Ophthalmological Society of the United Kingdom

The annual congress of this society will be held at 1, Wimpole-street, London, W., from April 28th to 30th. The opening discussion will be on the differential diagnosis of the causes of exophthalmos. Mr. L. H. Savin, 7, Queen-street, W.1, is the hon. secretary of the society.

Institute of British Surgical Technicians

A lecture on recent surgical procedure will be given to this institute by Mr. A. Dickson Wright on Friday, Nov. 26th, at 8 P.M., at the Welbeck Hotel, Welbeck-street, London, W. Medical practitioners should apply for tickets to the secretary of the institute, 6, Holborn-viaduct, E.C.1.

British Institute of Radiology

The annual dinner of the institute will be held on Friday, Dec. 10th, at the Piccadilly Hotel, at 8 P.M. Dr. Russell Reynolds, the president, will be in the chair. Tickets may be had from the secretary of the institute, 32, Welbeck-street, London, W.1.

National Institute for the Blind

Sir Humphry and Lady Rolleston were At Home on Nov. 9th at the Alfred Eichholz Clinic in Great Portland-street, London, which was founded three years ago to serve as a centre for physiotherapy by the blind. During the evening blind chartered masseurs demonstrated their work.

Royal Society

The list of names to be recommended for election to the council of this society on Nov. 30th contains the following : president, Sir William Bragg, O.M. ; treasurer, Sir Henry Lyons ; secretaries, Sir Frank Smith and Prof. A. V. Hill ; foreign secretary, Sir Albert Seward. The council is to include Prof. D. M. S. Watson, Mr. F. L. Pyman, Prof. S. P. Bedson, M.D., Prof. M. Greenwood, F.R.C.P., Prof. John Mellanby, M.D., Prof. David Keilin, and Prof. J. Graham Kerr.

The Copley medal has been awarded to Sir Henry Dale in recognition of his contributions to pharmacology, particularly to pharmacology of muscle and of neuro-muscular transmission. The Buchanan medal has been awarded to General F. F. Russell for his work on public health problems in many parts of the world on behalf of the international health division of the Rockefeller Foundation.

The Dublin Hospitals

Speaking last Saturday at the Royal College of Surgeons in Ireland Prof. Henry Moore emphasised the urgency of the solution of the problem of hospital development in Dublin. He hoped that the negotiations about enlargement of the voluntary hospitals would come to a speedy and successful conclusion. Any attempt to control the voluntary hospitals from outside or to limit their freedom would be repelled by the hospitals. They were quite willing to submit to a reasonable degree of inspection and examination to ensure that the grants given them for building and equipment were efficiently used for the definite purpose for which they were intended, and the annual grants could be stopped by the awarding authority, although it was most unlikely that such action would be necessary, considering the past history and services of the voluntary hospitals. The voluntary hospitals would not accept conditions which would deprive them of their freedom.

Deutsche Gesellschaft für Kreislaufforschung

The eleventh congress of this society will be held at Bad Nauheim on March 26th and 27th. The principal subject for discussion is to be circulatory collapse, and further information may be had from Prof. Eb. Koch, Bad Nauheim, Kerckhoff-Institut.

Victoria Memorial Jewish Hospital, Manchester

Lord De La Warr on Nov. 12th opened the extension to the nurses' home at this hospital. The night nurses have been working on the 48-hour system for the last two months and the day staff have now started. The extension was required to accommodate the additional nurses needed for the working of the new system.

Hospital Film Première

The voluntary hospitals of London are combining to hold a film première on Dec. 7th at the Leicester-square Theatre. The Duke of Kent will be present, and the programme will include a film entitled The War Without End, which shows the work of the hospitals and which has been made under the auspices of the King Edward's Hospital Fund. The entire proceeds of this performance will be distributed to the hospitals, and tickets may be had from the organiser, Mr. R. F. Millard, 36, Kingsway, London, W.C.2.

Mary Putnam Jacobi Fellowship

The Women's Medical Association of the City of New York offers this fellowship ($1000 for one year) which is available for post-graduate work in the medical sciences. The fellowship is open to any woman graduate of an approved medical school, and the fellow must give full time to the study of her problem, and if she is not resident in the United States she should make the study preferably in the United States. Applications should be filed before April 1st. Further information may be had from Dr. Phoebe DuBois, 150, East 73rd-street, New York.

Physiology and Medicine

At the opening meeting of the Biological Society of the Royal College of Physicians and the Royal College of Surgeons held in Dublin last Saturday, Prof. W. J. E. Jessop, the president-elect, read an address urging that in medical education there should be direct and intimate contact between physiology and medicine. In this view he was supported by Prof. Henry Moore, who invited the teachers of physiology to make themselves more familiar with the hospital side of medicine. The true physiologist should study both normal and disordered function.

Dominion Doctors on the L.C.C. Medical Staff

The Hospitals and Medical Services Committee report that 27 (or 7 per cent.) of the whole-time medical staff (378) employed at L.C.C. hospitals and institutions at the end of October were Dominion medical graduates. Australia supplied the greater number (15), 7 came from New Zealand, 1 from Canada, and 4 from South Africa. Of 54 assistant medical officers acting as locum tenents at the same date, 21 (or 38·9 per cent.) were Dominion or Colonial graduates, 9 coming from Australia, 3 from New Zealand, 5 from Canada, 3 from South Africa, and 1 from Malta.

Significance of Pay-bed Wings

Last week in thanking the Queen for opening the paying patients' wing at St. Mary's Hospital, Paddington, the dean of the medical school, Dr. C. M. Wilson, said that the first purpose of a teaching hospital was to set up standards of doctoring and nursing for the whole country. They had to demand of each new procedure whether it contributed to that end. When they applied that criterion to this pay-bed wing they found that it was an opportunity to bring the doctor who had gone out into practice back to his own hospital, there to play his part in the diagnosis and treatment of disease under the conditions which only a teaching hospital can provide. It was certain, he said, that whereas at the present time only a privileged few had the opportunity of working under hospital conditions eventually the whole profession would be able to look after their own patients when they were really ill in hospital.

Hospital Developments at Limerick

A scheme has been approved for the erection at Limerick of a general hospital and fever hospital near the city. It is proposed to convert the existing county hospital at Croom into a tuberculosis hospital. The scheme will cost over £300,000.

Royal National Hospital for Rheumatic Diseases, Bath

The governors of this hospital have accepted the offer of the Bath corporation to exchange sites, and to build a new hospital. Steps for preparing and raising the site are now being undertaken.

Whitehaven's New Hospital

The Commissioner for Special Areas has agreed to make a grant of £90,000 towards the new hospital scheme if the Cumberland county council will increase its proposed grant to £20,000 and the Whitehaven town council its grant to £2000. The hospital committee would then be assured of capital grants of £112,000.

Demonstrations of Educational Gymnastics

Under the auspices of the Ling Physical Education Association demonstrations of educational gymnastics and keep-fit work will be given as follows: at King Edward's High School for Boys, Bristol-road, Birmingham, on Friday, Nov. 19th, at 8.30 P.M.; at the High School for Girls, Dover-street, Manchester, on Nov. 25th, at 4 P.M.; and at East Sheen County School, Hertford-avenue, London, S.W., and the Castelnau Estate Church Hall, Stillingfleet-road, Barnes, on Jan. 26th, at 8.30 P.M. Members of the medical profession are invited to attend.

St. Bartholomew's Hospital, Rochester

Sixty additional beds will be in use at this hospital next year and in order to raise funds for their maintenance a new contributory scheme is being started. A regular weekly contributor will be entitled to receive treatment for himself and his dependents at the hospital, and under certain conditions grants will be made from a reserve fund towards the cost of treatment at other hospitals. Grants will also be made towards dental and ophthalmic treatment, surgical appliances, and ambulance and convalescent home services.

Royal National Orthopædic Hospital, London

On Nov. 9th a dinner was held at Claridge's on behalf of this hospital at which the Duke of Gloucester spoke. He said that during the last 17 years nearly £300,000 had been spent on land and buildings and improvements of which only about £45,000 now remained unpaid. A private block was needed at the country branch at Stanmore and the present massage and electrical treatment rooms were inadequate. In all, the hospital had to maintain 490 beds, a large out-patient department with over 150,000 attendances and a resident training college. For all this something like £70,000 a year had to be raised. A collection was made at the dinner when £8869 was subscribed.

Appointments

ACRAMAN, WINIFRED L., M.R.C.S. Eng., Assistant Medical Officer for Rhondda.

BIGHAM, ALLAN, M.D. Manch., Hon. Dermatologist to the Royal Infirmary, Bradford.

DIXON, G. J., M.B. Dubl., M.R.C.P. Lond., Medical Registrar at Charing Cross Hospital.

MACGREGOR, ALEXANDER, M.B. Camb., L.D.S., Hon. Dental Surgeon at the British Red Cross Society's Clinic for Rheumatism, London.

OFENHEIM, ANGELA, M.R.C.S. Eng., D.A., Hon. Anæsthetist to the Invalid and Crippled Children's Hospital, Plaistow.

ROBINSON, OLIVER, M.R.C.S. Eng., D.M.R.E., Hon. Radiologist to the Invalid and Crippled Children's Hospital, Plaistow.

SIGNY, A. G., Pathologist to the Infants Hospital, Vincent-square.

WATSON, JEANNIE F., M.B. St. And., Resident Surgical Officer at the Royal Manchester Children's Hospital, Pendlebury.

CAIRD, Dr. A. J., of Carlisle, has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1925, for the Appleby, Brampton, Carlisle, Haltwhistle and Alston, Penrith, and Wigton County Court Districts (Circuit No. 3).

Vacancies

For further information refer to the advertisement columns

Birmingham City Education Committee.—Asst. School M.O., £500.
Birmingham University.—Lecturer in Anatomy, £600.
Bolton Royal Infirmary.—Res. Surg. O., £250. Also H.P. and H.S., at rate of £200 and £150 respectively.
Brighton, Royal Sussex County Hosp.—Two Hon. Clin. Asst. Anæsthetists. Also H.P., £150.
Brighton, Sussex Eye Hosp., Eastern-road.—H.S., at rate of £150.
British Medical Association, Tavistock-square, W.C.—Asst. Secretary, £800.
Cardiff, King Edward VII Welsh National Memorial Association. Asst. Tuber. M.O. for North Wales Sanatorium, £500. Also Asst. Res. M.O. for Glan Ely Hosp., £200.
Central London Throat, Nose, and Ear Hosp., Gray's Inn-road, W.C.—Third Res. H.S., at rate of £75.
Charing Cross Hosp., W.C.—Refraction Officer to Ophth. Dept., 1 gn. per session.
Chelsea Hosp. for Women, Arthur-street, S.W.—Jun. H.S., at rate of £100.
Cheshire County Council.—District Tuber. Officer, £750.
Chester Royal Infirmary.—Surgeon for Orthopædic Dept., £350.
Child Guidance Council, Upper Woburn-place, W.C.—Temp. General Secretary, at rate of £400.
Connaught Hosp., Orford-road, E.—Sen. Res. M.O. and Cas. O., at rate of £175 and £110 respectively.
Cumberland County Council.—Consultant in Gynæcology and Obstetrics. £450.
Dreadnought Hosp., Greenwich.—H.P. and H.S., each at rate of £110.
East Ham Memorial Hosp., Shrewsbury-road, E.—Dental Anæsthetist, 10*s.* 6*d.* per session.
Edgware, Redhill County Hosp.—Res. Asst. M.O., £400.
Evelina Hosp. for Sick Children, Southwark, S.E.—H.S., at rate of £120.
General Lying-in Hosp., York-road, S.E.—Jun. Res. M.O. and Anæsthetist, at rate of £100.
Gloucestershire Royal Infirmary, &c.—H.S. to Ear, Nose, and Throat Dept., at rate of £150.
Grove Park Hosp., Lee, S.E.—Asst. M.O., £350.
Hampshire County Council.—Asst. County M.O., £600.
Hampstead General and N.W. London Hosp., Haverstock Hill, N.W.—H.S., at rate of £100.
Harrogate Royal Bath Hosp.—Res. M.O., £156.
Hertford County Hosp.—H.S., at rate of £200.
Hospital for Sick Children, Great Ormond-street, W.C.—Res. Anæsthetic Reg., at rate of £150.
Hosp. for Tropical Diseases, Gordon-street, W.C.—Res. Med. Supt., £400. Also H.P., at rate of £120.
Hosp. for Women, Soho-square, W.—Hon. Clin. Assts. to Surgeons in Charge of Out-patients. Also Res. M.O., at rate of £100.
Hull Municipal Maternity Home and Infants' Hosp.—Jun. Res. M.O., at rate of £100.
Ilford Isolation Hosp.—Res. M.O., £600.
Ilford, King George Hosp.—Cas. O. and Surg. Reg., £150.
Ilkley, Middleton-in-Wharfedale Sanatorium.—Jun. Res. M.O., £350.
Inverness, Royal Northern Infirmary.—Med. Consultant and Hon. Charge-Physician, £1200.
Isleworth, West Middlesex County Hosp.—Res. Asst. M.O., £400.
Kettering and District General Hosp.—H.P., at rate of £150.
Liverpool Dental Hosp., Pembroke-place.—Hon. Anæsthetist.
London County Council.—Asst. M.O.'s, Grade I, each £350. Also Asst. M.O., Grade II, £250.
London Hosp. Dental School, E.—Demonstrator of Operative Dental Surgery.
London Hospital, E.—Asst. Radiologist, £200. Also Registrar to Dental Dept., £250, and Clin. Asst. to Prosthetic Dept., £75.
Maidstone, Kent County Ophthalmic and Aural Hosp.—Hon. Surgeon to Ear, Nose, and Throat Dept.
Manchester Royal Children's Hosp., Pendlebury.—Res. H.S., at rate of £100.
Manchester, Withington Hosp.—Res. Asst. M.O., at rate of £200.
Marie Curie Hosp., 2, Fitzjohn's-avenue, N.W.—Res. M.O., £100.
Medical Research Council, 38, Old Queen-street, S.W.—Administrative Officer.
Middlesex County Council.—Visiting Laryngologist for County Sanatorium, 3 gns. per session.
National Hosp., Queen-square, W.C.—Res. M.O., £150.
Northumberland County Council.—Sen. Asst. School M.O. and Asst. to County M.O., each £750.
Norwood and District Cottage Hosp.—Matron, £132.
Nottingham, Ransom Sanatorium and Sherwood Village Settlement.—Med. Supt., £750.
Paddington Green Children's Hosp., W.—Hon. Ophth. Surgeon. Also Hon. Physician to Skin Dept.
Paddington School Treatment Centre, 12, Maida Hill West, W.—Refractionist, £1 16*s.* 4*d.* per session.
Plymouth Education Committee.—Sen. Asst. M.O., £750.
Preston, Whiston County Hosp., near Prescot.—Visiting Ear, Nose, and Throat Surgeon, 3 gns. per session.
Prince of Wales's General Hosp., N.—Hon. Asst. Surgeon to Ear, Nose, and Throat Dept. Also Hon. Clin. Assts.
Princess Elizabeth of York Hosp. for Children, Shadwell, E.—Res. M.O., £200. Also Out-patient M.O. and H.S., at rate of £175 and £125 respectively.
Queen Mary's Hosp. for the East End, Stratford, E.—Res. Appointments, at rate of £150–£110.
Queen's Hosp. for Children, Hackney-road, E.—H.P., H.S., and Cas. O., each at rate of £100.
Rochdale, Birch Hill Hosp.—Jun. Res. M.O., at rate of £225.
Rotherham Hosp.—Cas. H.S., £150.
Royal Air Force, Dental Branch.—Commissions.
Royal Free Hosp., Gray's Inn-road, W.C.—Med. and Surg. Registrars, each £200. Res. Cas. O., at rate of £150. Dist. Obstet. Asst. and Gynæc. Reg., each at rate of £100. Also In-patient Obstet. Asst., Second H.S.
Royal Masonic Hosp., Ravenscourt Park, W.—Res. M.O., £300. Also Res. Surg. O., at rate of £250.
Royal Naval Medical Service.—Medical Officers.
Royal Waterloo Hosp. for Children and Women, Waterloo-road, S.E.—H.S., at rate of £100.
St. George's Hosp., S.W.—Asst. in Bacteriological Dept., £250.
St. John's Hosp. for Diseases of the Skin, 5, Lisle-street, W.C.—Two Hon. Asst. Physicians.
Salvation Army Mothers' Hosp., Lower-Clapton-road, E.—Jun. Res. M.O., at rate of £80.
Southampton Free Eye Hosp.—H.S., £150.
Southampton, Royal South Hants and Southampton Hosp.—H.P., Res. Anæsthetist, H.S. to Ear, Nose, and Throat Dept., and Cas. O., each at rate of £150.
Southend-on-Sea General Hosp.—Cas. O., at rate of £100.
South London Hosp. for Women, Clapham Common, S.W.—H.P. and H.S., each at rate of £100.
South Shields County Borough.—Asst. M.O., £500.
South Shields Ingham Infirmary.—Res. Surg. O., £300.
Sunderland Royal Infirmary.—H.S. and H.P., each £120.
Surrey County Hospital, Wolverton-avenue, Kingston-upon-Thames.—Res. Physician, £725.
Tunbridge Wells, Kent and Sussex Hospital.—Sen. H.S., £150.
Uxbridge, Hillingdon County Hosp.—Res. Asst. M.O., £400.
Warwick, King Edward VII Memorial Sanatorium, Hertford Hill.—First Asst. M.O., £350.
West End Hosp. for Nervous Diseases, Welbeck-street, W.—Hon. Asst. Physician.
West Middlesex County Hosp., Isleworth.—Obstet. Surgeon, £1000.
Wolverhampton, New Cross Hosp. and Institution.—Asst. (Deputy) M.O., £350.
Woolwich and District War Memorial Hosp., Shooters Hill, S.E.—H.P. and H.S., each at rate of £100. Res. Surg. O., £175. Also Hon. Laryngologist.
Worksop, Victoria Hosp.—Jun. Res., £125.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Brixworth (Northants).

Births, Marriages, and Deaths

BIRTHS

BOSTON.—On Nov. 9th, at Deddington, Oxon, the wife of Dr. F. Kenneth Boston—a son.

CAUSEY.—On Nov. 11th, at Fowey, Cornwall, the wife of Mr. Gilbert Causey, F.R.C.S.—a son.

DENTON.—On Nov. 13th, the wife of Dr. Aubrey R. O. Denton, of Modbury, S. Devon—a daughter.

FARMER.—On Nov. 10th, at Westcliff, the wife of Dr. A. Pring Farmer, Sudan Medical Service—a daughter.

HASLETT.—On Nov. 11th, at Cheltenham, the wife of Dr. Hamilton Haslett—a daughter.

MARRIAGES

ANDERSON—RIGBY.—On Nov. 9th, at Chelsea Old Church, Major John Hughes Anderson, R.A.M.C., to Hilda, daughter of the late Major Albert Rigby.

MARTIN—MOWLL.—On Nov. 10th, at Christ Church, Dover, Dr. John Aston Martin, C.M.S. Hospital, Shiraz, Iran, to Marjorie, second daughter of Mr. Rutley Mowll, Dover.

DEATHS

BROWN.—On Nov. 13th, at Newton Abbot, Joseph Jopling Brown, F.R.C.S. Edin.

BROWNE-CARTHEW.—On Nov. 11th, Ralph Henry Browne-Carthew, M.D. Durh., of Ashley-place, S.W.

CLAYTON.—On Nov. 12th, William Kitson Clayton, C.M.G., T.D., late Colonel Army Medical Services, of Wakefield and Scarborough.

DOLBEY.—On Nov. 12th, at Chelsworth Hall, Suffolk, Robert Valentine Dolbey, M.S. Lond., F.R.C.S. Eng., late Professor of Surgery at Cairo University and late Major R.A.M.C.

GUTHRIE.—On Nov. 12th, at the Royal Naval Hospital, Chatham, Harry A. L. Guthrie, Surgeon Commander, R.N. (retired), of Powis-square, W.

JONES-PHILLIPSON.—On Nov. 13th, at Hof-street, Cape Town, Cecil E. Jones-Phillipson, F.R.C.S. Edin.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

EXTENSIONS TO SALISBURY INFIRMARY.—Extensions forming part of the £80,000 scheme for reconstruction at this hospital have been opened by the Duchess of Gloucester. Over £48,000 has been raised in three years for the scheme.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 22nd.

Odontology. 8 P.M. Mr. R. T. Payne: Infection of the Salivary Glands.

TUESDAY.

Medicine. 8.30 P.M. Dr. J. B. McDougall and Dr. E. W. Twining: The Clinical Value of the Tomograph.

WEDNESDAY.

Comparative Medicine. 5 P.M. Dr. J. Henderson Smith: Recent Work on Heavy Proteins in Virus Infection and its Bearing on the Nature of Viruses. Dr. C. H. Andrewes, Mr. J. D. Bernal, F.R.S., and Mr. F. C. Bawden will also speak.

THURSDAY.

Urology. 8.30 P.M. Clinico-pathological meeting.

Neurology. 8.30 P.M. Clinical meeting at the West End Hospital for Nervous Diseases (Out-patient department, 73, Welbeck-street, W.1).

FRIDAY.

Disease in Children. 5 P.M. (Cases at 4.30 P.M.) Dr. C. Hardwick: Problems of Undulant Fever in Children. Dr. A. W. Franklin: 1. Atelectatic Bronchiectasis. Dr. F. D. Hart: 2. Acute Rheumatism Arising in the Course of a Staphylococcal Septicæmia. Dr. R. T. Brain: 3. Urticaria Pigmentosa. Dr. Beryl D. Corner: 4. Pituitary Tumour with Adiposis Congenitalis Syndrome in a Child aged 2 years. Dr. R. Bevan (for Dr. Pearson): 6. Rickets with Multiple Spontaneous Fractures. Dr. G. H. Newns: 7–8. Monocytic Leukæmia. Dr. R. H. Bailey (for Dr. Sheldon): 9. Bilateral Detachment of the Retina following Acute Hydrocephalus.

Epidemiology and State Medicine. 8.15 P.M. Dr. H. H. Bashford: The Contribution of Industry to Medicine.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

WEDNESDAY, Nov. 24th.—2.30 P.M. (11, Chandos-street, W.), quarterly general meeting. Dr. K. C. L. Paddie: The Prophylaxis of Dysentery in Mental Defectives.

THURSDAY.—3 P.M. (1, Wimpole-street, W.), Prof. F. L. Golla: Science and Psychiatry. (Maudsley lecture.)

Pathological, Bacteriological, and Biochemical Subcommittee.

TUESDAY.—11 A.M. (11, Chandos-street, W.), Dr. H. A. Pullar-Strecker: Recent Advances in Insulin Shock Treatment of Schizophrenia.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.

MONDAY, Nov. 22nd.—8 P.M., Clinical Meeting.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY, 5, Lisle-street, W.C.

WEDNESDAY, Nov. 24th.—4.30 P.M., clinical case. 5 P.M., Mr. L. R. Broster: Adreno-genital Syndrome.

EUGENICS SOCIETY.

TUESDAY, Nov. 23rd.—5.15 P.M. (Royal Society, Burlington House, Piccadilly, W.), Mr. J. C. Trevor: Some Anthropological Considerations of Race Crossing.

MEDICO-LEGAL SOCIETY.

THURSDAY, Nov. 25th.—8.30 P.M. (26, Portland-place, W.), Dr. Julius Burnford: Food Poisoning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

UNIVERSITY OF LONDON.

TUESDAY, Nov. 23rd.—5.15 P.M. (Bedford College), Prof. Edgar Rubin: Experience and Perception, Thinking, Feeling. (First of three lectures.)

THURSDAY.—5.15 P.M. (Bedford College), Dr. Louisa Garrett Anderson: Elizabeth Garrett Anderson. (Fawcett lecture.)

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.

TUESDAY, Nov. 23rd.—4.30 P.M., Dr. C. Hinds Howell: Syphilis of the Nervous System.

WEDNESDAY.—Noon, clinical and pathological conference (medical). 2 P.M., Prof. J. H. Dible: Ulceration and Malignant Disease of the Intestine. 3 P.M., clinical and pathological conference (surgical). 4.30 P.M., Dr. S. R. Gloyne: The Pathology of Tuberculosis.

THURSDAY.—2.15 P.M., Dr. Duncan White: Radiological Demonstration. 3.30 P.M., Dr. R. M. Fry: Puerperal Sepsis.

FRIDAY.—2 P.M., clinical and pathological conference (obstetrics and gynæcology). 2.30 P.M., Mr. V. Zachary Cope: Actinomycosis.

Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics and operations, obstetrical and gynæcological clinics and operations, refresher course for panel practitioners.

TAVISTOCK CLINIC, Malet-place, W.C.

THURSDAY, Nov. 25th.—8.30 P.M., Sir Maurice Cassidy: Cardiac Neuroses.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE Hammersmith, W.

MONDAY, Nov. 22nd.—4.15 P.M., Mr. Green-Armytage: Lecture.

TUESDAY.—4.15 P.M., Mr. C. Hamblen Thomas: Mastoiditis.

WEDNESDAY.—4.15 P.M., Mr. H. P. Gibb: Demonstration of Eye Cases.

THURSDAY.—4.15 P.M., Mr. B. G. Simmonds: Lecture.

Clinics, ward visits, and operations daily at 10 A.M. and 2 P.M.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road W.C.

MONDAY, Nov. 22nd, to SATURDAY, Nov. 27th.—General Practitioners' Week.

FRIDAY.—4 P.M., Mr. F. W. Watkyn-Thomas: Otosclerosis.

ST. GEORGE'S HOSPITAL, S.W.

THURSDAY, Nov. 25th.—5 P.M., Dr. Anthony Feiling: Neurological Demonstration.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, Nov. 22nd.—3.30 P.M., Dr. Macdonald Critchley: Aphasia.

TUESDAY.—3.30 P.M., Dr. J. P. Martin: Affections of the Cranial Nerves.

WEDNESDAY.—3.30 P.M., Dr. F. M. R. Walshe: Clinical Demonstration.

THURSDAY.—3.30 P.M., Mr. Harvey Jackson: Aids in the Diagnosis of Cerebral Tumours.

FRIDAY.—3.30 P.M., Dr. E. A. Carmichael: The Autonomic Nervous System.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.

THURSDAY, Nov. 25th.—3 P.M., Dr. W. G. Wyllie: Clinical Demonstration.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Nov. 25th.—2 P.M., Dr. Wilfred Pearson: Hæmorrhagic States in Children. 3 P.M., Mr. Denis Browne: Tuberculous Diseases of Bone in Children. Out-patient clinics daily at 10 A.M. and ward visits at 2 P.M.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle-street, W.C.

TUESDAY, Nov. 23rd.—5 P.M., Dr. Hugh Gordon: Cutaneous Affections due to Sunlight.

THURSDAY.—5 P.M., Dr. A. M. H. Gray: The Sarcoids and Lupus Pernio. (Chesterfield lectures.)

ST. JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE, Ranelagh-road, S.W.

FRIDAY, Nov. 26th.—4.30 P.M., Dr. Francis Bach: Physical Medicine in the Rheumatic Diseases at the Menopause.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.

WEDNESDAY, Nov. 24th.—4 P.M. (St. James' Hospital, Ouseley-road, S.W.), Dr. Donald Hunter: Occupational Diseases.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Nov. 22nd, to SUNDAY, Nov. 28th.—ST. JOHN'S HOSPITAL, 5, Lisle-street, W.C., afternoon course in dermatology (open to non-members).—BROMPTON HOSPITAL, S.W., twice weekly at 5 P.M. M.R.C.P. course in chest diseases.—NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W., Tues. and Thurs., 8 P.M., clinical and pathological course.—LONDON CHEST HOSPITAL, Victoria Park, E., Wed. and Fri., 6 P.M., M.R.C.P. course in heart and lung diseases.—BROMPTON HOSPITAL, S.W., Sat. and Sun., course in chest diseases.—Unless otherwise stated, courses are open only to members.

LEEDS GENERAL INFIRMARY.

TUESDAY, Nov. 23rd.—3.30 P.M., Mr. Reginald Broomhead: The Non-medical Treatment of Osteo- and Rheumatoid Arthritis.

LEEDS PUBLIC DISPENSARY AND HOSPITAL.

WEDNESDAY, Nov. 24th.—4 P.M., Prof. S. J. Hartfall: The Treatment of Some Common Disorders of Digestion.

MANCHESTER ROYAL INFIRMARY.

FRIDAY, Nov. 26th.—4.15 P.M., Dr. Crighton Bramwell: Cardiac Cases.

ANCOATS HOSPITAL, Manchester.

THURSDAY, Nov. 25th.—4.15 P.M., Dr. Reginald Ellis: Bronchitis and Asthma.

UNIVERSITY OF SHEFFIELD.

SUNDAY, Nov. 21st, and FRIDAY, Nov. 26th.—Post-graduate Clinics at the Royal Hospital, Royal Infirmary and Jessop Hospital.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

WEDNESDAY, Nov. 24th.—4.15 P.M. (Royal Hospital for Sick Children), Prof G. B. Fleming: Medical Cases.

YARMOUTH HOSPITAL.—A new nurses' home was opened on Oct. 21st at this hospital to replace the old one which was never intended to be permanent. The building has three storeys and will accommodate some forty nurses.

NOTES, COMMENTS, AND ABSTRACTS

EXPECTATION OF LIFE OF THE SYPHILITIC

AT a meeting in 1929 of physicians and dermatologists in Stockholm the discussion centred on syphilis and life assurance. Dr. Strandberg, one of the openers, remarked at the end of it that the compass had been boxed by the various speakers, whose opinions had ranged from the most optimistic to the most pessimistic. The optimists, he thought, had been recruited for the most part from the venereologists, the pessimists from the physicians, neurologists, and psychiatrists. The discussion ended in the decision that a committee be appointed to study the prognosis of syphilis. An outcome of the work of this committee has now appeared in the form of a more or less preliminary report by Dr. G. Willners, the basis of whose calculations are the 364 cases of recent syphilis treated at the St. Göran's Hospital in Stockholm in 1913 (*Nord. med. Tidskr.* Oct. 30th, 1937, p. 1784). He did not go further back, for this was the first complete year in which the compulsory notification of syphilis was operative in Sweden. (It may be noted in passing that the total number of cases notified throughout Sweden in 1913 was 1941.) Willners's 364 included 270 males whose average age was twenty-seven, the youngest patient being seventeen, the oldest fifty-three. He was unable to trace 83; 47 had died, and 140 were still alive. Of the 47 deaths, 5 could be directly traced to syphilis, the causes of death having been notified as aortitis, general paralysis, and the like. There were 24 deaths unconnected with syphilis (pulmonary tuberculosis, pneumonia, &c.), and 18 whose causes might or might not have been syphilis. Among these 18 deaths there were as many as 17 of a violent character, including drowning, and it was not possible to eliminate suicide because of syphilis as being at the root of some of them. Information as to the state of health of the 140 survivors still remains to be collected. The treatment given in 1913 was mercurial, the salvarsan era not having yet been established, and the era of bismuth not having yet arrived. In calculating the influence of syphilis on the duration of life of his 270 male patients, Willners has assumed that the mortality among the 83 patients who could not be traced was identical with that of those about whom information could be obtained, and on this somewhat optimistic basis he concludes that there was an excessive mortality of about 50 per cent. among the persons studied. Hence his opinion that, from the life assurance point of view, the young man who acquired syphilis in the pre-salvarsan, pre-bismuth era must be considered as a bad risk.

HOW CRIMINALS ARE MADE

FIFTY years ago Lacassagne coined his maxim that societies have the criminals they deserve. Mr. Henry Rhodes now preaches a stimulating sermon from this text.[1] A member of the Institute of Criminology of the University of Lyons and of the International Academy of Criminology, he is able to expound both the improved technique of the modern criminal and the ever-growing resources of science with which society strikes back. But, when he has conducted us round the rogues' gallery of murderers, forgers, confidence tricksters, drug barons, and white slavers, it is at us ourselves that he points his accusing finger. We have these criminals because we deserve them. Overcrowding, for instance, means that all the members of one family, different generations and different sexes, sleep together in a single room. This develops the Œdipus complex, the son's jealousy of the father, a theme which is repeated on several pages of the book. Mr. Rhodes observes also that our civilisation is always giving the child a toy and taking it away again; thus the withholding of alcohol in prohibitionist America led to gangster crime. Better education, he says, has created the intelligent capacity to enjoy; yet social conditions deprive the vast majority of an adequate standard of living. The competitive element is all wrong. Fierce competition forces fire assessors into vast frauds in order that a Leo Harris may make a bare living. Ideas of individual property, whether in the possession of chattels or of a wife, foster the instinct of covetousness. Soviet Russia, hints Mr. Rhodes, is the most hopeful field for a crimeless existence, because in that country crime can be properly defined in terms of the whole community and differentiated from social behaviour. Abolish private property and you abolish larceny. The statistics of theft rise and fall with the price of wheat.

The outlook, we conclude, is bleak. Our crime is costing us more. There is an increase in the population of persons "twisted in the making," a rise in sexual and unnatural offences, in forgery, and in false pretences. Our system of punishment, says Mr. Rhodes, creates many more criminals than it cures; it confirms in them that anti-sociality which is an amplified function of its own defects and failures. He has made us feel thoroughly uncomfortable. Almost it surprises us to find that we still meet more good citizens than criminals. It is a lame rejoinder, but let us defiantly pretend that we deserve the good citizens too.

[1] The Criminals We Deserve. By Henry T. F. Rhodes. London: Methuen and Co. 1937. Pp. 257. 7*s.* 6*d.*

A CRITIC OF INJECTION TREATMENT OF HERNIA

THE treatment of hernia by sclerosing injections has been attracting much attention of late, and in the opinion of P. Romualdi has aroused more enthusiasm than it deserves (*Attualità med.* 1937, **2**, 169). He regards it as a valuable accessory to surgery in the rare cases where there is some very strong contra-indication to operation, but he claims that its advantages as compared with operation have been greatly exaggerated, and that, on the other hand, the modern operation for hernia is so simple and safe and offers so good a chance of cure that it is the procedure of choice in the average case. It is pointed out that the injection treatment may take a long time, during the whole of which a truss must be continuously worn (and the necessity of obtaining a truss at all is a serious drawback for poor patients), that it is not always possible for a patient to carry on his work during the period of treatment (and this again would apply chiefly to poorer patients engaged in hard manual employments), and that it is not altogether free from the risk of serious complications such as peritonitis from accidental perforation of a loop of bowel or strangulation. In comparing results, moreover, it must be remembered that the cases that are the least favourable for operation such as those with very large hernial orifices or, complicated by a chronic cough, are the very cases in which even its ardent advocates advise against the injection treatment and in favour of surgery.

PHILOSOPHY OUT OF FICTION

IN a book[1] following closely on the heels of one noticed in these columns this time last year Dr. Macpherson Lawrie stresses many of the same points from a different angle. Marriage and its difficulties are his main theme, but in tracing the origin of these difficulties the author delves into the problems of the sound physical and mental upbringing of children and the maintenance of bodily and mental health

[1] Love, Marriage, and Divorce. By Macpherson Lawrie, Physician in Psychological Medicine to Queen Mary's Hospital for the East End, London. London: Methuen and Co. 1937. Pp. 198. 5*s.*

throughout life. The first part of the book tells the story of a young couple who fail to make a success of their married life. Their failure is ascribed by Dr. Lawrie to emotional over-sensitivity on the part of the man and lack of psychological experience on the part of the woman; both of these conditions originating in unwitting mismanagement by their parents in early youth. He draws these characters as classical examples of types which he believes are common in the world to-day, and contends that they and their troubles are at the bottom of an immense amount of individual and racial unrest and unhappiness. The second part of the book is devoted to a consideration of the various ways in which the bodies and minds of men and women are wrecked by faulty upbringing and the direct bearing of this on the production of unhappiness in marriage. Dr. Lawrie will not have heredity blamed for more than a minimum of the world's troubles; the infant is not born with a load of original sin. On the contrary he maintains that "nature in the raw" before it has been spoiled by physical and psychological malnutrition has essentially excellent and desirable qualities. The book ends on a note of optimism, for though most of us are seen as struggling against such heavy odds as unnecessary fatigue, bodily discomforts of one sort or another, and wrong thinking on matters of sex, yet in Dr. Lawrie's view these handicaps can largely be removed by taking thought.

VITAL STATISTICS OF MINNESOTA

THE number of persons in Great Britain likely to be acutely interested in the detailed vital statistics of the State of Minnesota would, one might surmise, be small. But if there *is* a small but select band of enthusiasts then they are well served by Calvin F. Schmid, associate professor of sociology in their university. In his book, "Mortality Trends in the State of Minnesota," [1] he produces innumerable statistics to show the course of the death-rate there in the last quarter of a century, its variation and secular trend at ages, by sex, by race, by marital status, by cause, and by season. What causes exact the greatest toll of death in Minnesota? What are the trends of death-rates from automobile accidents, suicide, homicide, tuberculosis, appendicitis, and other causes? Has the seasonal variation of mortality changed in Minnesota? He with a desire to know will find it all here set out quite simply, together with plenty of references to relevant data on each subject. He will not find anything new in the way of methods or that the inhabitants of Minnesota differ very much in their vital statistical habits from those of more familiar countries. The males, as elsewhere, drown themselves accidentally more freely than the females, both sexes die less in infancy to-day than thirty years ago, less succumb to tuberculosis but more to heart disease, cancer, and diabetes. Neonatal mortality fails to improve, females die more frequently than males from whooping-cough, childbearing grows more dangerous as women grow older. All well-worn statistical observations but none the less important to Minnesota.

A MODERN HERBALL

THERE is a pleasant flavour of Gerard's Herball about Mrs. Leyel's monograph [2] on tisanes, electuaries, and juleps—not to mention robs. She is so familiar with the herbs that are pleasant to the taste that she has been able to call them all by name, to recite happy things that have been said about them by poets through the ages, to associate them with much interesting folk-lore, and to induce Miss Rivers-Moore to make attractive line drawings of them. The indexes of familiar names in English, French, German, and Italian are alone worth the price of the book, and it would be churlish to expect the soberer fruits of physiology in such a collection, although it is a little surprising that one who knows plants as Mrs. Leyel does should think that their respiration is opposite to that of animals, or that the wild strawberry has a special action on the mesenteric glands.

[1] The University of Minnesota Press; London: Humphrey Milford, Oxford University Press. 1937. Pp. 325. 16s.

[2] Herbal Delights: Tisanes, Syrups, Confections, Electuaries, Robs, Juleps, Vinegars, and Conserves. By Mrs. C. F. Leyel, with drawings by M. E. Rivers-Moore. London: Faber and Faber. 1937. Pp. 429. 15s.

WATSON CENTENARY 1837-1937

AMONG the industries in this country with a long record the optical trade holds an honourable position. Particularly is this so with microscope makers, nearly all of whom go back for three or more generations. An example of interest is the firm of W. Watson and Sons Ltd., whose centenary is being celebrated this year, and who have issued an interesting historical account of their inception and progress. The business was started by William Watson at 71, City-road, E.C., and since that time has been carried on by his descendants, some of whom are still controlling the activities of this firm. To those interested a copy of this centenary brochure will no doubt be sent on application.

Mr. ANTHONY PALIN writes: It has been brought to my notice that certain dramatised and exaggerated accounts have appeared of a corneal grafting operation which I recently performed on a hospital patient. I wish to say that these reports were entirely unauthorised by myself or by officials of the Bristol Eye Hospital.

HÆMORRHAGIC DISEASE OF THE NEW-BORN.—Dr. Norman B. Capon draws our attention to an error on p. 261 of our issue of July 31st. The total number of cases of hæmorrhagic disease of the new-born discussed in his paper at Belfast should have been given as 63, not 68, and of these 58 recovered. An account of 61 of the cases was given in THE LANCET early this year (1937, **1**, 431).

CYSTS OF THE UPPER INCISOR REGION.—Mr. H. T. Roper-Hall, M.B., B.D.S., writes: "I am grateful to the readers who have been so kind as to send me details of their cases of the above type for the paper I am preparing. As these conditions are not common I shall be glad if readers will be good enough to help me further with details of cases, interesting models, diagrams, slides, or radiograms, or references in the literature. The cysts can be classified as: (*a*) anterior retention cysts at the angle of the nose, between the lip and the alveolus; (*b*) fissural cysts, between the teeth (median fissural cysts, and lateral or globulomaxillary cysts); (*c*) incisive canal cysts—i.e., behind the incisor teeth; and (*d*) dermoid or inclusion cysts." Mr. Roper-Hall's Birmingham address is 43A, Calthorpe-road, Five Ways, Birmingham, 15.

PROTEIN SENSITIVITY TESTS.—The practitioner often feels the need of a simple outfit wherewith he can determine whether a patient is sensitive to certain proteins, or whether he does in fact suffer from true hay-fever. The Cuti-Reactions Outfit now issued by Allen and Hanburys Ltd. (London, E.2) makes such a proceeding about as easy as it can be. A small box contains 35 small ampoule droppers—each sufficient for several tests—and a scarifier. There are three "primary groups" (A, B, and C) with which the test is started. If one of these groups should give a positive reaction, the test can be continued with the members of that group, "A" being vegetable foods, "B" animal foods, and "C" dusts and pollens. The different members of each group are suitably pooled—all the grass pollens being together in one tube, the tree pollens in another, and so on. An instruction book is included and also some test cards on which the results may be entered. The outfit is compact and convenient and is sold at a reasonable price.